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THE AMERICAN REVIEW OF REVIEWS

EDITED BY ALBERT SHAW

AN INTERNATIONAL MAGAZINE

SEPTEMBER

Labor Troubles in Europe
The New Science of Illumination
A Spaniard's View of Spain's Condition
What the New Tariff Means to the Consumer
Does Bread-Hunger Threaten the World?
Making Better Use of Our Soils
Hawaiian Problems of To-day

THE REVIEW OF REVIEWS CO., 13 Astor Place, NEW YORK

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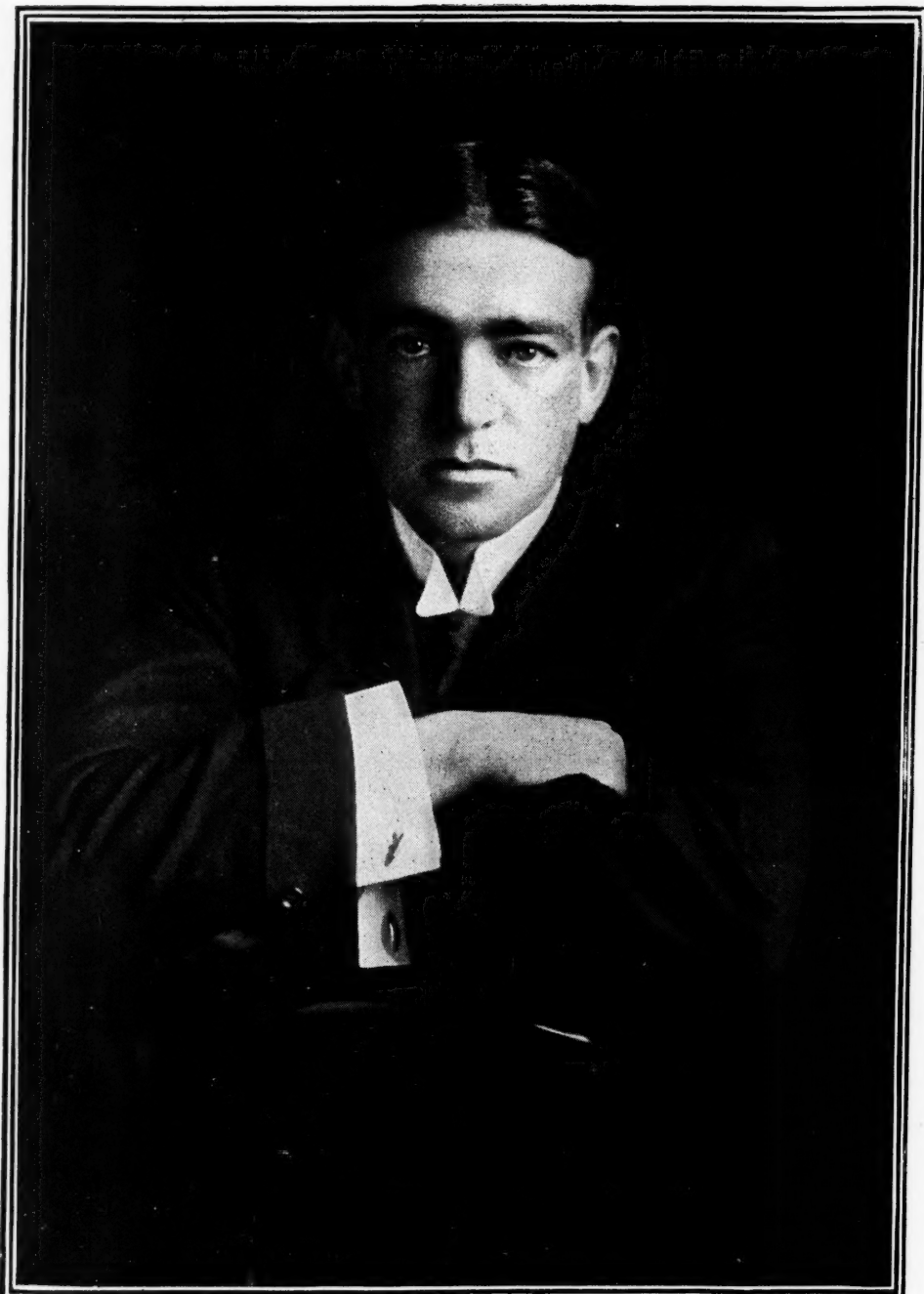
The American Review of Reviews.

EDITED BY ALBERT SHAW.

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LIEUTENANT SHACKLETON, WHO HAS COME NEARER TO THE SOUTH POLE
THAN ANY OTHER HUMAN BEING.

Ernest H. Shackleton, of the British Navy, on January 9 of the present year, reached latitude $88^{\circ} 23'$ South, within 111 miles of the South Pole. Last month the British Government decided to refund to him the expenses of his expedition, which "has cast imperishable glory on the British name." Lieutenant Shackleton is planning a lecture tour through the United States in the near future.

THE AMERICAN REVIEW OF REVIEWS

VOL. XL.

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No. 3.

THE PROGRESS OF THE WORLD.

*"Reulsion
Up-
ward."* The House of Representatives accepted the report of the joint Conference Committee on the Payne tariff and adopted it on the last day of July. The Senate took a few days longer for debate and passed the measure on Thursday, August 5. President Taft signed it immediately, and the law went into effect at midnight. Meanwhile great ships were racing across the Atlantic laden with goods, importers were straining every nerve to get their stuff into the custom house Thursday evening rather than Friday morning, and Collector Loeb, at the Port of New York, found himself fairly besieged by the custom house brokers and their principals, who were desperately eager to have their cargoes admitted under the Dingley rates instead of the Payne rates. And yet the country was being solemnly told that the tariff had been quite materially reduced pretty much all along the line. Surely it is something new under the sun for the people who pay custom-house duties to scramble and fight in order to get in under the higher rather than the lower rates. The Government needs revenue quite seriously, and it would hardly be reasonable to suppose that Congress would pass a revised tariff bill and put it into effect immediately, without giving anybody a chance to know the details, if rates on the average were to be sharply reduced.

*What the
New Law
Really Is.* The simple fact is that the Payne tariff is the most thoroughgoing high-protectionist measure that has ever been enacted in this country or in any other land. It is far too intricate for the understanding of any one man, unless he has devoted himself for years to the sole and exclusive study of tariff details. For non-experts who have given several solid

months recently to the tariff question, Mr. Payne, Senator Aldrich, and others in Congress are quite remarkably well informed. But it would be ridiculous to insist upon the view that these or any other gentlemen in Congress actually made the tariff schedules. In this tariff, as in all preceding tariffs, the schedules have been worked out upon the basis of the technical knowledge and the urgent demands of the people actually engaged in the numerous industries seeking some form of benefit by virtue of some particular part of the tariff enactment. Readers who would really like to know what the new tariff is,—in comparison with the Dingley tariff which suddenly disappeared on the night of August 5,—will do well to read carefully the article which we have caused to be prepared for their enlightenment, and which will be found beginning on page 341 of the present issue of the REVIEW.

*An
Expert's
Analysis.* The article has been prepared, without bias and with the greatest regard for accuracy, by an expert who is much better able to deal with this question of rates and schedules in detail than is any member of either House of Congress, without exception. The average rate of duty worked out by application to actual importations in the last year of normal business (1907) shows a slight increase in the new tariff. But this small increase, apparent on the face of things, will become a good deal greater when the actual outcome can be shown, a year hence, of the shiftings and jugglings of classification. It is almost impossible to keep what are known in Washington as "tricks" and "jokers" out of the tariff schedules. At one stage or another, this Payne bill was full of these subtle little provisos and qualifications, the real meaning of

which was intended to be hidden from the average Congressman until the bill had been safely passed and signed. A good many of these petty and disgraceful tricks were detected and eliminated. Some others which were cut out in course of debate were slipped in again while the bill was in Conference Committee. The reader of our expert's article will find concrete instances of this kind clearly stated.

*How
the Consumer
Fares.*

The great public was entitled to reduced rates on articles of clothing. Our expert shows how the public was bamboozled all along the line. Mr. Taft, who began to take a keen interest in details of the tariff toward the end of the Senate debate, insisted upon having hides put on the free list in accordance with the views of the Eastern tanners and makers of shoes and leather articles. This was finally conceded by the West, in consideration of a material reduction in the duty on shoes and other leather manufactures. But it was found after the bill had come out of the Conference Committee that the reduction on shoes had been qualified in such a way as to be without any meaning or value. Such a storm was raised about this that, in order to save the tariff bill as a whole from wreckage, a joint resolution was adopted instructing the enrolling clerk to leave out the qualifying words. The tricksters fought till the last.

*The
Method of
Folly.*

In its total effect this new law, so far as the customs duties are concerned, has not justified a hot extra summer session of Congress lasting twenty weeks. The whole business serves to illustrate the futility of the present way of dealing with the tariff. The chief value of the session lay in that part of the great Senate debate which set forth the ignorance, folly, and favoritism, as well as the recklessness involved in making tariff schedules by dickers and trades among the representatives of private interests. The tariff in detail is certainly a most monstrous and iniquitous performance. This remark is by no means meant to attack those who hold sincerely to the theory of protection and who believe that protection can be put into practice on broad, general grounds. But the present bill was not made from the standpoint of protection on broad, general grounds, nor was it made from the more obviously legitimate standpoint of sound taxation and the production of Government revenue. Nor should this comment be construed as a criticism of the public men who have had a part in enacting the new law. It is not so intended. It is meant to be as emphatic a criticism as words will permit of the method by which our tariffs are made. It is an abominable method,—a disgrace to a civilized country. It is everybody's fault. The tariff is as good as the country demands.



THE TARIFF FRANKENSTEIN.
From the *Traveler* (Boston).

*The Tariff
Commission's
Functions.*

At the very end of the session the clause providing for the appointment of a commission of tariff experts by the President was altered by cutting out the words intended to give this group of experts authority to make general tariff inquiries at the President's direction for the benefit of future legislation. In its final form the clause authorizes the President to appoint these experts for the sake of aiding him in the exercise of the discretion conferred upon him to apply the new maximum and minimum rates to foreign countries. This is something very different from the purposes of the tariff commission as generally advocated by thoughtful men throughout the country. Senator Beveridge had prepared the original clause which was finally altered. In the last days of the debate on the conference report he inquired if the change was meant to prevent the tariff commission from making inquiries in the field of cost of production and of tariff rates in general. Senator Hale, of Maine, who ranks



THE ROADS ARE TERRIBLE, BUT THE CAR HAS PLENTY OF POWER.
Herbert Johnson in the Philadelphia North American.

next to Senator Aldrich in the Finance Committee, replied with great frankness and characteristic zest that the change in the tariff-commission clause was intended to restrict the work of the experts absolutely to advising the President about applying maximum and minimum rates. President Taft, on the other hand, says that he can manage to use the tariff experts in such a way as to get the practical results that the advocates of a tariff commission had demanded. In view of the specific and pointed refusal of Congress to confer any such power upon a commission, it is somewhat difficult to see how President Taft can make his experts do the things which they were to have done in the bill as it passed the Senate, but which the Conference Committee struck out from the final measure at the behest of the House leaders, who have never favored any kind of a commission, and had allowed none in the Payne bill.

What
of the
Future?

There was, indeed, never any chance of obtaining at this extra session a decent revision of the tariff schedules. Public opinion was not well developed on that subject. Individual mem-

bers of Congress were under pressure from their respective States and districts. Only a handful of men took the large, national view. Every locality in the country,—North, South, East, and West,—was selfishly demanding the thing that it believed would make for its own interests. Nominally it was a Republican tariff; actually it was just as much Democratic as Republican, and in point of fact it was not partisan at all. It was simply a hodge-podge, on the plan of an old-fashioned river and harbor bill. The reductions of rates in so far as the consumer is concerned were more nominal than real. The great protected interests were all well looked after. The nominal reductions in iron and steel were little or nothing, as compared with what the great American steel industry could readily have borne. The textile industries are more carefully protected than under the Dingley bill. There are, of course, some good things in the law, such as the relaxation of the taxes on foreign literature and art. It had been hoped that Congress would at least grant the country a tariff commission which could be getting ready for a scientific revision at some time in the future. But this is exactly what the lobbyists of the great pro-

tected interests do not want. The present chaotic method of tariff-making is the thing they are determined to retain if possible.

*No Remedy
Through
Partisanship.*

For a remedy it would be idle to turn from one party to the other. Tariff reform will have to come in this country through a ripening of business conditions and the development of public opinion. The Democratic party, in spite of its traditional pretensions on the score of tariff reform, has not even as broad a national view of the subject as the Republican party and is not a promising instrument for sound revision. The most hopeful sign was that presented by the group of dissenting Republican Senators. Their discussion of the tariff question was broad, patriotic, and able. One does not need to accept their views and positions in detail in order to perceive that they represent, upon the whole, a higher standard than that of the majority. Seven of these Senators decided to vote against the adoption of the conference report. These, in alphabetical order, were Beveridge, of Indiana; Bristow, of Kansas; Clapp, of Minnesota; Cummins and Dolliver, of Iowa; La Follette, of Wisconsin, and Nelson, of Minnesota. These gentlemen were well aware, of course, that the bill had a safe majority and would become a law.



DEFIANT TO THE END.
From the Press (New York).

They had criticised it, for one reason or for another, very severely during the debate; and they thought it best, each man for his own reasons of judgment and conscience, to vote against the bill in the end. Perhaps if their votes were to have determined the fate of the measure some of them might have voted differently. It may be safely predicted that they will have no difficulty in making their positions clear to their constituents. The Iowa and Minnesota Senators disapprove in a thoroughgoing way of many essential parts of the law. Senator Beveridge had for several years been identified with the movement for a tariff commission; and he might have voted for the present measure, unsatisfactory as he may think its schedules to be, if his commission plan had been adopted as an instrument for securing better results in the future. But when his commission scheme was destroyed by having the vital clause taken out of it he had a very ample reason for voting against the bill.

*The Corporation
Tax Is Now
the Law.*

We stated in these pages last month some grounds upon which the new corporation tax that is made part of the general Payne bill has been criticised as not equitable. However the courts may construe it technically as an "excise" tax, it is in reality, of course, an income tax upon corporations. It picks out business enterprises throughout the country having nothing in common, except that they are carried on as joint-stock companies, and it levies a federal tax of 1 per cent. upon their net earnings or incomes. Hundreds of comparatively small businesses which six months ago were contemplating the plan of becoming incorporated under the laws of their respective States will give up that idea and remain as private firms or partnerships. One hears of many others already in the corporate form which are thinking of relapsing to the status of partnerships or unincorporated firms. Among practical business men the difference between an incorporated business and its rival which happens not to be incorporated does not seem vital enough to make it proper that one should be subjected to a federal tax and the other exempt.

*Arbitrary
Dis-
tinctions.*

But if this distinction be practically unjust, it would seem a still greater impropriety to exempt from taxation an incorporated enterprise which is carrying on a large business, but does not show profits, while subjecting to



Photograph by the Pictorial News Co., N. Y.

PRESIDENT TAFT, WITH SENATOR ALDRICH AND MR. PAYNE.

(At the testing of the Wright brothers' aeroplane, near the close of the Payne-Aldrich tariff conference.)

taxation its rival doing business with like capital and under exactly similar conditions, but managed on its expense side in such a way as to permit the setting aside of a portion of the gross earnings in the form of dividends or net profits. The taking out of net profits under such circumstances is purely a matter of business policy and choice. One dry-goods store may decide as a matter of policy for several years to cover back all its receipts in various expenditures, such as advertising, while its rival for reasons of its own prefers to make salaries and advertising expenses smaller and to pay dividends upon outstanding shares of stock. The one institution is as able to pay taxes as the other. The only possible basis for a proper taxing of corporations upon any showing of their business condition is upon their gross income. What they do with that gross income in the way of fixed charges, current expenses, and so on, is a matter for them to decide.

*Several
Kinds of
Corporations.*

It is obvious to the thoughtful man that there are several very different groups of business corporations. First there are fiduciary concerns,

notably banks, institutions for saving, trust companies, and insurance companies. It is everywhere admitted that these ought to be under public regulation, and that their affairs should be duly inspected and publicly reported. Then comes a totally different class of corporations, of a quasi-public character, because holding public franchises and rendering certain necessary public services. These are transportation companies, general and local, telegraph, telephone, gas and electric lighting companies, and the like. It is proper that these should be held to public account. There is still another class of corporations that can be grouped in a real sense, although it is hard to bound them by an exact line. These are the so-called "trusts." They are ordinary, private business undertakings which have grown so large as to have assumed a public character through their magnitude and importance and also, as a rule, through the fact that their shares of stock are listed upon exchanges and publicly bought and sold. There are possibly two or three hundred of these, if the list be made as inclusive as possible. As a rule, they have absorbed smaller companies.

*The Minnows
with the
Big Fish.*

Here we have three groups of corporations which most people admit should be subject to some kind of public oversight and regulation; and the third group,—namely, the great industrial corporations engaged in interstate commerce,—ought, it is asserted in the platforms of all political parties, to be regulated by the federal government. Mr. Taft and the advocates and supporters of the new corporation tax declare openly that their measure is designed as a method of securing publicity and federal oversight of corporations. But the thing that seems to have been lost sight of, at least in its proper bearing and proportion, is the fact that there are scores of thousands of business corporations in this country that no political party, however radical, has ever asked to have brought under any kind of federal regulation, control, or taxation, or under any scheme of publicity and reporting. Mr. Bryan in all his proposals for regulating trusts and corporations has been careful to say that he had no thought of extending federal cognizance to any incorporated businesses excepting those really national in magnitude and scope, and to some extent, at least, monopolistic in their power to control their own particular lines of trade.

*What the Public
Does Not Care
to Know.*

With all respect to the gentlemen who have brought this measure forward,—and have secured its enactment into law with less discussion than was given to any one of a hundred details of the tariff schedules,—we must hold to the opinion that the discriminations in this new tax are not based upon sound distinctions. Nor does the suggestion that the measure will really aid us to secure federal regulation of corporations seem to be well founded. The country will not care to have officials at Washington secure a stringently accurate sworn report of the business transactions and net profits of an incorporated lumber yard at Lincoln, Nebraska, for instance, while the rival lumber yard, perchance doing a bigger and more profitable business and quite as able to pay taxes, should be neither listed nor taxed, all because Jones & Co. are not incorporated, while Smith & Co. are a joint-stock concern under the Nebraska law. The tax itself is small, and it is not pretended that it is to be levied for the sake of revenue. A proper readjustment of the tobacco taxes alone would supply more revenue than the promoters of the corporation tax expect from this experiment. The group of great indus-

trial corporations whose general transactions are already known have little occasion to bother about this corporation tax as at present devised. It will not hurt them or annoy them. But for every one of these big public industrial companies, or "trusts," there are several thousand little corporations doing a private business, as regards which no element of public opinion whatever has been demanding federal publicity. It is true that a number of the States have for their own State purposes seen fit to accompany the grant of business charters with a moderate plan of special corporation tax. But this has not usually been levied with any unwelcome incidents of publicity, and is upon a principle quite different from that of the federal tax.

*Publicity
as the
Law Requires.*

Many business men are only now realizing, after a careful reading of the text of the new corporation tax law, what a thoroughgoing and all-including measure of publicity it is. Every business, bakery, grocery store, or village draying concern, incorporated or working as a joint stock company, is subject to the tax, provided only its net profits exceed \$5000 in a year. Undoubtedly the most irksome and unpopular result of the measure will be the entire publicity given to the affairs of concerns that are in effect private businesses, though conducted under the corporate form. Such a business would generally have little objection to paying the tax, or to reporting its paid-up capital stock, and the amount of its bonds and other indebtedness. The new law provides, however, that in addition there must be reported the gross income, the aggregate expenses for the year, the amount of interest paid, the taxes paid, and the figures of net income for the year. These reports are placed on file for public inspection, and there is little doubt but that the office of the Commissioner of Internal Revenue, where these figures will be shown as public records, will be a busy spot for disseminators of gossip and for people anxious to find out the inside facts of their rivals' business. If the accountant's science were an exact one there would be less disadvantage in such a situation; but where the best and more honest of intentions exist the accountant's science is notoriously inexact. The penalties for failures to file statements are drastic. The Commissioner of Internal Revenue is empowered to examine the books of a corporation failing to report and to use the United States courts to compel the attendance of officers and the production of

books and papers. For failing to file the report or for presenting a false or fraudulent one the corporation is to be fined from \$1000 to \$10,000, and any individual making a false report is liable to a fine of \$1000 or imprisonment, or both. The annual report is to be made on or before March 1, as of the calendar year preceding, and the tax must be paid before July 1 following.

With the year's crops worth *Prosperity.* \$8,000,000,000, with the tariff settled, with the steel business jumping to nearly its normal activity, and with no political clouds on the sky, trade and finance have fairly come to what is known as a "boom," although it is several months less than two years after the panic of 1907. In the stock market there has been an almost continuous rise in the prices of securities during the past quarter year. In the last days of July and the first part of August this rise became more rapid and excited under the stimulus of the tremendous advance in the stock of the United States Steel Corporation and of the rumors of important happenings in Union Pacific financing. The common stock of the Steel Corporation sold as high as 78½, as against 41¼ in last May, 22½ in October of 1907, and 8¾ in 1904. There has suddenly come this summer a general belief that the Corporation is able to show good value behind even its junior securities, while it is obvious that if such a period of depression as we have been through in the steel trade could be weathered so nicely there must be a great opportunity for earnings in the "boom" times. The belief of the men who are managing the Steel Corporation in the value of its stock is now known to be very strong. The new plant at Gary, the most modern in the world, and built out of earnings, will importantly reduce costs of manufacturing, and, what is most essential of all, the country is again buying steel heavily. Railroads are giving large orders for cars, locomotives, rails, and bridge material, and while the Corporation was in the middle of August still operating only 90 per cent. of its capacity, this shows an advance of 50 per cent. over its business of three months ago, and it is said that the present output is really greater, in absolute figures, than the record output of 1907. The excitement and record prices in Union Pacific securities,—the common stock reached 219 on August 16, as against 100 in 1907,—were caused by apparently well founded rumors

that the assets of the railroad would be "segregated." In other words, the present stockholders are, if this report be true, to receive certificates of beneficial interest in the enormous holdings of the Union Pacific of the stock of other roads. The net income of this marvelous system promised to give about 20 per cent. for the common stock for the last year. The general list of securities dealt in on the Stock Exchange rose so rapidly in sympathy with these rosy facts, and in response to the improving general business of the country, that the average price of the important railroad stocks reached on August 14 a price of 134.46, as against the high record in 1906 of 138.36. We are now seeing the securities of American industries sell at about the highest figures reached in the past generation.

*The Cost
of
Living.*

The average householder finds some difficulty in getting the full measure of satisfaction from the return of the country to trade activity, for the cost of living, which has been increasing so rapidly for most of the past thirteen years, is again advancing from the slightly lower levels brought by the depression of 1908. All through the past summer the prices of the necessities of life have been slowly advancing, reaching on August 1 the highest figure reported for that date, save one in 1907. It is rather startling to see that the average cost of the supplies practically every household must buy has increased over 49 per cent. since 1896. The Bradstreet Agency has selected 106 articles of domestic consumption and has kept a careful record of their prices, month by month, for seventeen years. The highest point ever reached was in March, 1907, after which came the moderate slump caused by the financial disturbances of that year. We are now marching steadily back toward this high record, and the August figures are only 6.8 per cent. below it. Some of the individual cases of increased costs are much more impressive than the average. Rubber has advanced from 81 cents a pound in 1896 to \$1.98 a pound now; pork, from \$8.25 per barrel to \$21.75; eggs, from 12½ cents a dozen to 28 cents; mutton, from 5½ cents a pound to 11 cents; corn, from 34 cents a bushel to 80 cents; wheat, from 64 cents a bushel to \$1.20, and so forth. The figures given are wholesale prices, and as a rule the advance to the ultimate consumer has been decidedly greater. It is rather interesting to note, in reading the Bradstreet statistics, that

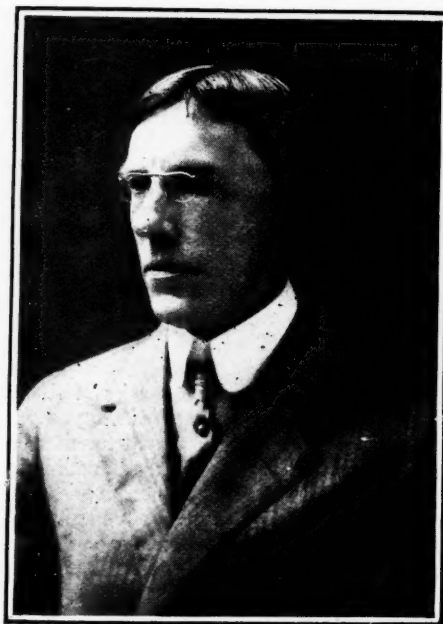
the commodities controlled by the trusts have generally shown a smaller increase in price than the average. Thus refined petroleum sold in 1896 for 7.8 cents a gallon, and the wholesale price now is 8½ cents; sugar cost in 1896 47½ cents per pound and costs now 4.85 cents; anthracite coal in 1896 cost \$4.25 a ton and is now \$4.90.

*Census Takers
and
Their Plans.*

Plans for taking the census of the United States next summer are now going forward in a satisfactory way. Heretofore the taking of the census once every decade under mandate of the Constitution has been regarded as a transient public job in which all the petty politicians should have a hand, like the wheat harvest in Kansas, where anybody for a few days may have good wages and plenty to eat. The politicians have fought hard to keep the civil service reformer from having his way with the census of 1910. But President Roosevelt vetoed the Census bill because Congress refused to heed his advice on the civil service question, and President Taft would not accept a bill until it had been

properly drawn in this respect. In former times, moreover, the Director of the Census dawned on the political horizon as a very powerful person, with an enormous patronage at his disposal, to be farmed out among the Congressmen and other local leaders subject to certain conditions. But the Census Bureau several years ago was made permanent, with certain *ad interim* statistical functions and the skeleton of an organization which could be expanded for directing the great decennial task. This permanent Census Bureau was assigned to the new Department of Commerce and Labor. Quite naturally Mr. Nagel, appearing on the scene as

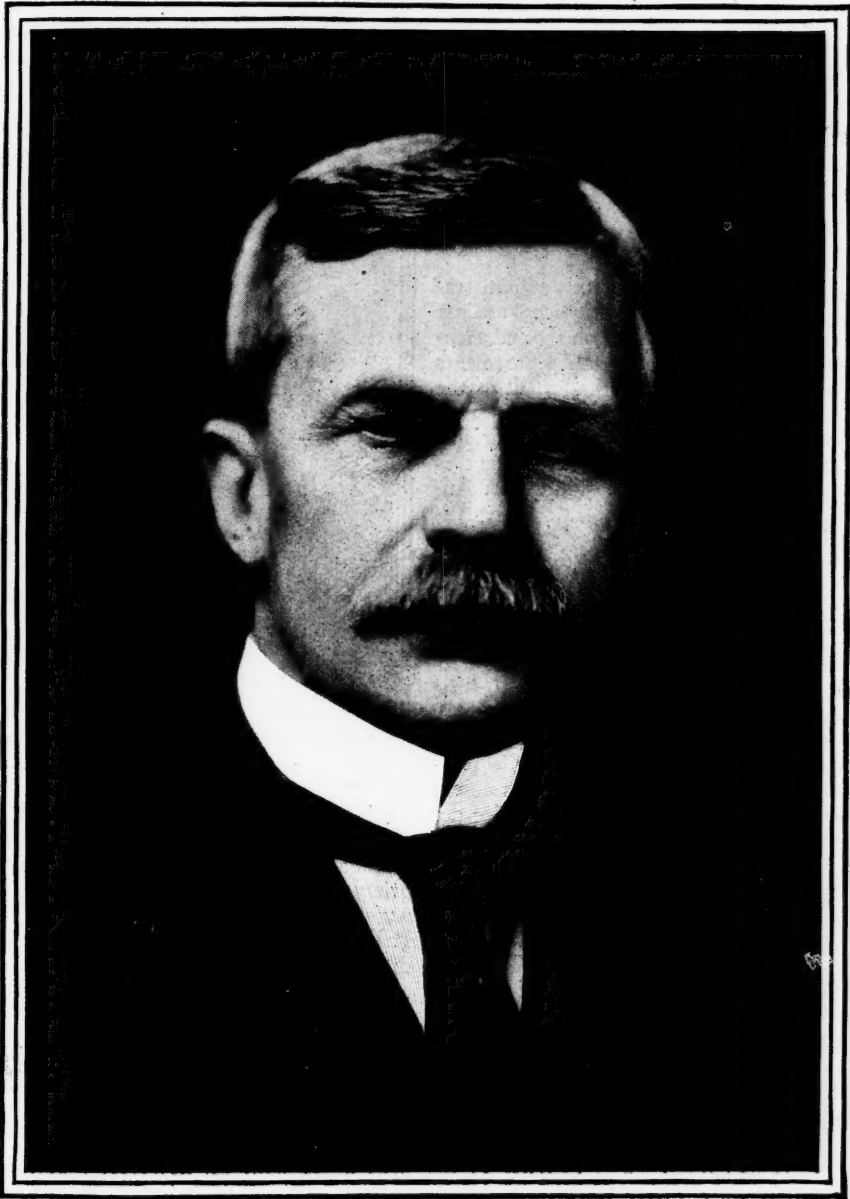
head of the Department of Commerce and Labor in Mr. Taft's Cabinet, took it for granted that the Census Bureau was subject to his control, in exactly the same sense as the Bureau of Corporations and all other bureaus of his portfolio. But the head of the bureau, Mr. North, was going on as a permanent official in the independent and self-directed manner of the Directors of the Census who had preceded him from time to time for a hundred years. This was very natural under all the circumstances, as can easily be seen.



MR. WILLIAM F. WILLOUGHBY.
(A picture of Mr. Durand appeared in the July REVIEW.)

*The
New Order
of Things.* Nagel and North, being both very strong men, saw their respective positions clearly and logically from their own standpoints. It was quite inevitable that the new order of things should have prevailed. Mr. Nagel, as responsible in a general way for everything assigned to his portfolio, is going to see that the census is properly taken in accordance with the law of Congress and subject to the guidance of nobody except the President alone. He has emphasized the departmental nature of the census work by transferring Mr. E.

Dana Durand from the Bureau of Corporations to the headship of the Census Bureau. Mr. Durand works easily, efficiently, and with unflagging good temper. He belongs to the group of university-trained specialists in the Government's employ, but nobody can call him "academic," as a term of reproach, inasmuch as he has shown himself a thoroughly practical man. He has chosen as his assistant Mr. W. F. Willoughby, also a trained economist of the university type, who has been serving for a number of years as a high official in Porto Rico and who will know how to lay down and enforce proper stand-



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HON. CHARLES NAGEL, SECRETARY OF COMMERCE AND LABOR.

ards of scientific accuracy in the work of securing and classifying the required information. For supervisors of the census throughout the country Mr. Durand has been selecting men on the basis of their especial fitness for the work. President Taft has announced in unmistakable tones that the supervisors

are to be chosen regardless of politics, and that the local enumerators in like manner are to be appointed for the sake of getting the work properly done, and not to help out any would-be dispensers of local patronage. Mr. Taft, Mr. Nagel, and Mr. Durand are in thorough accord and are determined to

take the census in a way that will avoid scandal and insure the highest possible degree of accuracy. It is a vast and difficult job; and Mr. Durand and Mr. Willoughby, who have gone from university chairs of political science and economics into the Government's service, will deserve and receive great credit if they carry the thing to a successful end within a reasonable length of time, upon the plans that they are now formulating.

*New
Treasury
Officials.*

It is evident that this administration has no prejudices against young men of scholarly and technical attainments, and that the departments at Washington are to have the benefit of the public spirited services of a good many men who are not merely practical politicians. For example, the Treasury Department is to have the services of Mr. Andrew P. Andrew as Director of the Mint. Mr. Andrew is a teacher of economics at Harvard, who has specialized in the subjects of money and finance and who has during the past year been a working expert for Senator Aldrich and the Monetary Commission. He has every qualification for a successful Director of the Mint. Another new official of the Treasury Department is Mr. R. E. Cabell, who has been made Commissioner of Internal Revenue. Mr. Cabell was made postmaster of Richmond, Va., by President Roosevelt and his efficiency in that office not less than his qualities of character and personality have gained for him the high regard of President Taft and Secretary MacVeagh.

*The Lincoln
One-Cent
Piece.*

There are phases of the work and administration of the Treasury Department that are of popular interest and there are others, perhaps more important, that the people at large do not understand. One of the popular matters has been the appearance of the newly designed one-cent piece with the head and bust of Lincoln taking the place of the long-familiar Indian head. The designer of the new coin is Mr. Victor D. Brenner, who has won great distinction as a medalist. President Roosevelt had seen Mr. Brenner's portrait of Lincoln in low relief and, admiring it greatly, had proposed that it should be adapted for use on the one-cent piece as one way of observing the Lincoln centenary. There was a great scramble for the new pennies as they first appeared last month, and a good many boys made large profits by obtaining quantities of the little coins at the New

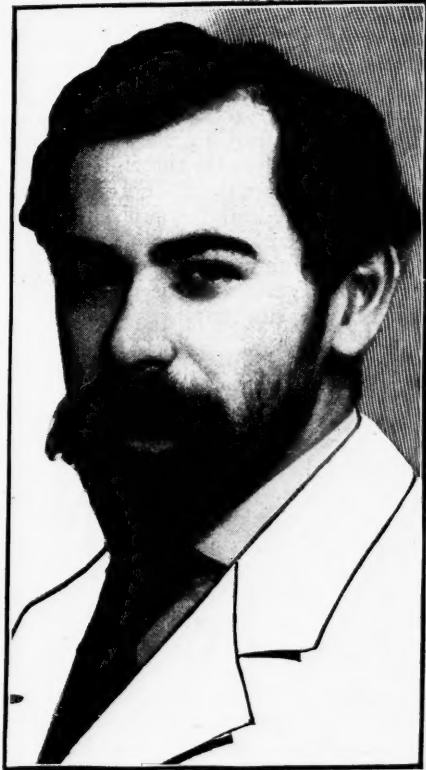


MR. ANDREW P. ANDREW.

York Sub-Treasury and selling them to people who had not yet seen them. An unfortunate incident was the question of propriety raised by the presence of Mr. Brenner's initials in very small letters on the coin. It has been customary to have the initials of designers on our American coins, and those on the penny as it appeared were so small as not to be obtrusive. Owing to criticism, however, it was decided to remove two of the initials, leaving only the letter "B." Opinions will differ as to the merits of the coin. No one will dispute Mr. Brenner's rank as artist and medalist. Many people will agree with us, however, that the new coin lacks strength and distinction, the head of Lincoln being much too small and the lettering on the reverse of the coin far less satisfactory than upon the little coppers which are to be displaced.

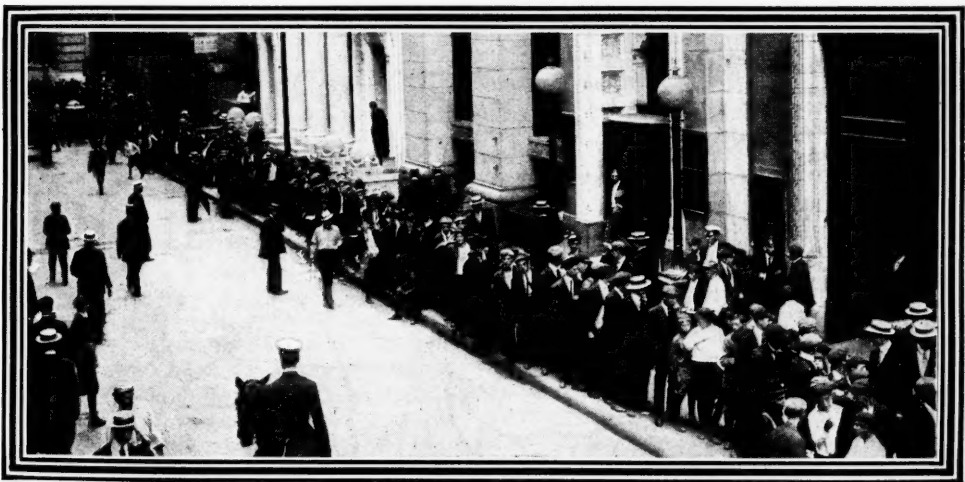
Another popular Treasury topic *Money Problems, Small and Great.* has to do with the cleanliness as well as with the designs of our paper money. Secretary MacVeagh has decided opinions upon these matters, and is

proposing to give us in the future smaller bills of simpler and more artistic design. It is certainly to be wished that our bills might either be frequently redeemed or else that they might be cleansed and disinfected from time to time. Much more serious, however, are the problems having to do with the method of issuing our paper money in view of the need of a more scientific and elastic currency. Mr. Aldrich and his associates of the Monetary Commission are at work upon their report and their promised bill, and they have no easy task ahead of them. It is likely to prove hard enough for them to agree among themselves; and then will come the great struggle to bring Congress to an acceptance of their views. Mr. Aldrich favors a central bank of issue, and this would involve a reorganization of the national banking system and of present currency arrangements. There will be strong opposition to this proposed centralization of the issuing function. Among other incidental problems connected with the subject as a whole is that of the interest to be paid upon the public debt. The Government has large outstanding issues of 2 per cent. bonds which hold their place in their investment market because most of them are owned by banks as the basis for the issue of circulating notes under the national banking law. The new method of issuing currency as proposed by Mr. Aldrich would make it unprofitable for the banks to hold these bonds, and the bottom would drop out of the market for 2 per



MR. VICTOR D. BRENNER.

cents. The Government would probably have to increase the interest on these bonds



Photograph by Brown Bros., N. Y.

CROWD OF PEOPLE IN LINE FOR SEVERAL BLOCKS AT SUB-TREASURY IN NEW YORK, OBTAINING THE "LINCOLN PENNIES."

to 3 per cent., which would mean a considerable item of expense. These questions of currency and banking, together with the many questions involved in the administration of the new Payne bill, must give Secretary MacVeagh and his able corps of assistants and counselors the cheerful prospect of a busy year before them. Fortunately, it is much easier to deal with problems of taxation, public revenue, and financial and monetary reform in a period of waxing prosperity than in one of business depression and dwindling revenue supplies.

*Income
Tax
Amendment.*

The first State Legislature to ratify the proposed income-tax amendment to the Federal Constitution was that of Alabama, which gave the proposition a practically unanimous vote in both houses. Forty years ago, when the Constitution was last amended by the States, the white voters south of Mason and Dixon's line had only a nominal part in ratifying the proposed amendments. To-day conditions are reversed in States like Alabama; and a centralized national government has so few terrors for the sons of the "reconstructed" that they hasten to set their approval on the taxation of individuals for federal purposes. It must not be assumed, however, that the income-tax proposition is going through the State capitals with a rush. The Georgia and Connecticut Legislatures adjourned last month without taking action on the amendment, as they were justified in doing, since

their constituents had given no mandate in the matter. Less than one-fourth of the Legislatures will be in session during 1910, so that nearly two years will have elapsed before three-fourths of the States can act.

*The President's
Vacation
and Plans.*

Mr. Taft's vacation at Beverly, long delayed by the tariff session, which had kept him at Washington, began on August 7. He was playing golf within an hour or two after his arrival in Massachusetts, and he has been keeping up his exercise most bravely. Meanwhile he is getting a perspective upon the larger matters of public business that lie ahead, and is holding necessary consultations. He was about to appoint the tariff commission experts as we closed our month's record, and was considering maturely the membership of the Customs Court. His great continental railway journey of 13,000 miles was to begin on September 15 and end on November 10 at Washington. The main plans of the journey were outlined in our pages last month. A remarkable number of interesting public matters will engage the President's attention on this tour, including the Seattle Exposition, visits to great Government engineering and military developments, a meeting with President Diaz, of Mexico, and a trip from St. Louis by water to New Orleans to attend the waterways convention. Mr. Taft will leave the departments running harmoniously and in a high state of practical efficiency.



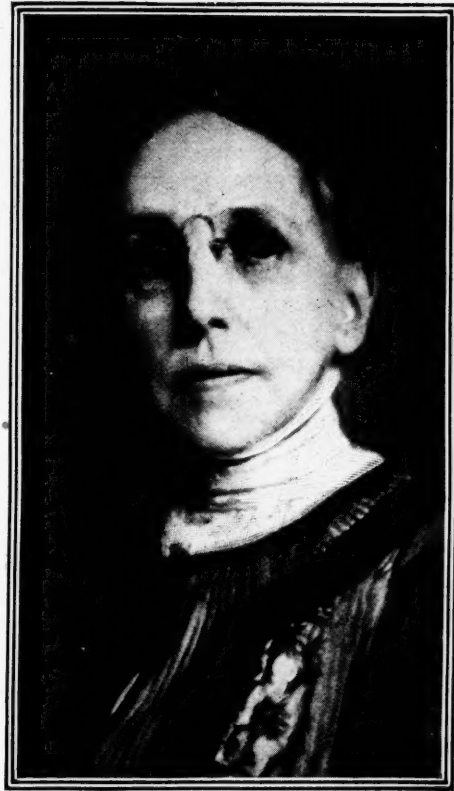
THE HEAVY LINE SHOWS THE MAIN ROUTE OF MR. TAFT'S 13,000 MILE JOURNEY AS NOW PLANNED.

*Referendum
Votes
in Cities*

During the past few weeks there have been a few interesting instances of the growing use of the referendum in American cities. The three-cent fare agitation in the city of Cleveland seems to have been ended, at least for the time, by a decisive vote of the people on August 3 against the granting of a three-cent franchise to a local traction company which had the backing of Mayor Johnson. Portland, Ore., was required to vote on a great number of propositions dealing with a great variety of interests. Among these was the proposed "commission" form of city government, which was rejected by the voters. Kansas City, Kan., on the other hand, voted in July to adopt that form of government, the citizens having become desperate under the evils of ward politics.

*Chicago's
Woman School
Superintendent*

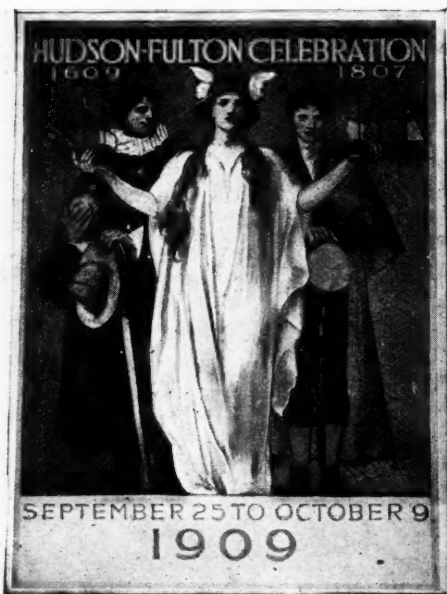
The recent selection of two Chicago women for positions of great responsibility illustrates the changing attitude of the public on the question of the fitness of women for administrative duties. At its annual meeting in June the National Conference of Charities and Corrections, a body made up of the ablest men and women in the country who are specializing in the lines of effort indicated by its name, chose for its president Miss Jane Addams, of Hull House. It was the first time that this eminently useful and aggressive organization had picked out a woman to serve as its executive head, but Miss Addams' qualifications for the office were recognized as exceptional. Very soon we hope to present in this REVIEW something by way of appreciation of the rare qualities that have given renown to Miss Addams and her work the world over. Last month another innovation was afforded by the decision of the Chicago Board of Education to name for superintendent of the city school system Mrs. Ella Flagg Young, an admirably qualified and experienced school executive, who knows the Chicago schools and their needs perhaps as well as any individual can know them. Besides her long and intimate association with the city school system, Mrs. Young's service as principal of the Chicago Normal School and as a member of the Chicago University faculty had revealed qualities of leadership that promised well for her success in the difficult position to which she has been elected. This is the first time that a woman has been made superintendent of schools in any large city.



MRS. ELLA FLAGG YOUNG.

*Hudson-
Fulton
Celebration.*

The two New York committees having in charge the arrangements for celebrating the centenary of Henry Hudson's discovery of the river that bears his name and the centennial of steam navigation on the same river wisely decided to combine their efforts and bring about through co-operation a twofold celebration truly worthy of such anniversaries. Robert Fulton's *Clermont* made its first trip up the Hudson in 1807, and it was at first intended that the centennial year should be marked by some special commemoration, but the postponement of two years doubtless insures a more general participation and a wider interest in the celebration, while the Hudson anniversary considered by itself will be international in character. The little *Half Moon*, a replica of Hudson's ship, constructed by the people of the Netherlands as their contribution to the pageantry of the occasion, has already arrived, and the *Clermont*, reproduced from the century-old model, will be ready to take part in the river pa-



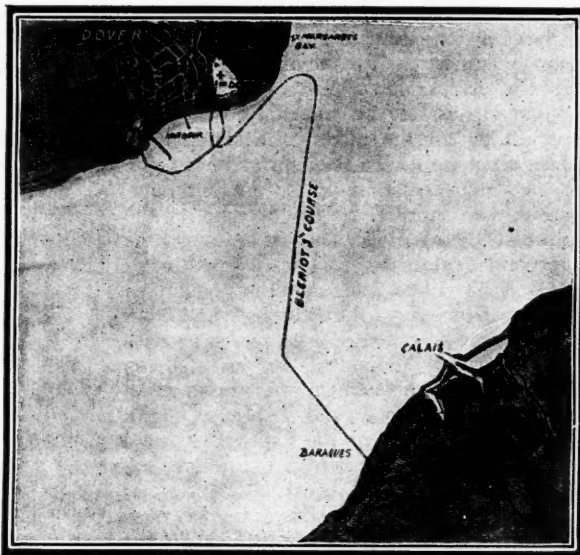
Copyright, 1909, by the Hudson-Fulton Cel. Com.
POSTER (REDUCED) HUDSON-FULTON CELEBRATION.

rade that will begin on September 25 and continue through the first week of October. It was announced last month that eighty war vessels would assemble for the cruise up the river from New York to Newburgh on October 1. Fifty-three of these will be detailed from the Atlantic Squadron of the United States Navy, and others will be sent by England, Germany, France, Italy, the Netherlands, Mexico, and the South American republics. It will be the largest fleet of an international character ever gathered in the world's history, and, although made up of war vessels, will fitly commemorate the achievements of the intrepid navigator whose voyages did so much for the promotion of the arts of peace three centuries ago. Not only New York, but every city and hamlet as far north as Troy, will have its share in the celebration.

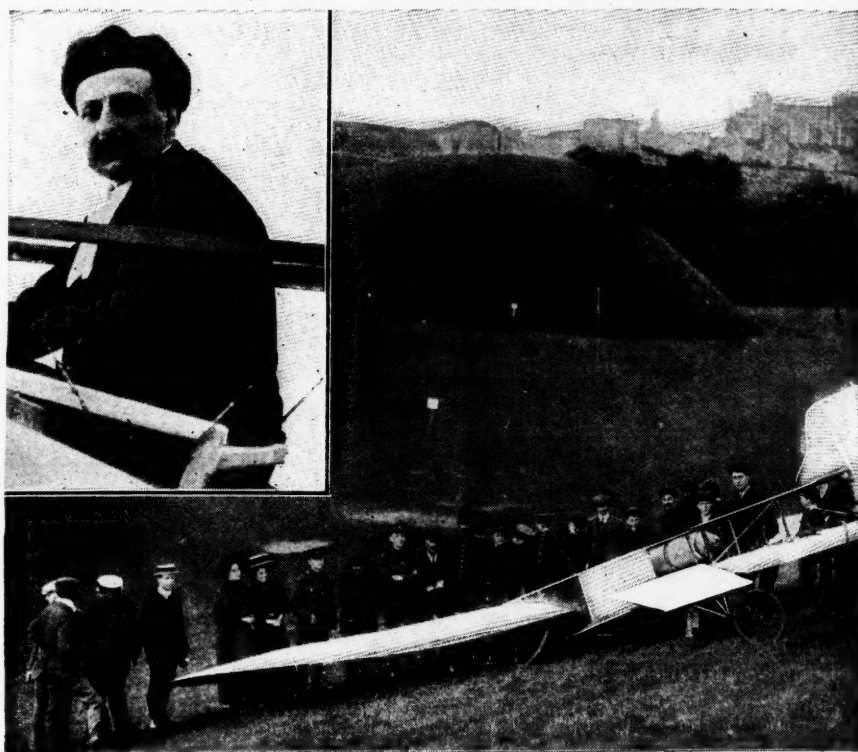
The science of aerial navigation continues to progress rapidly, and each month sees new records and more remarkable feats.

The most sensational event of July in this field was the safe accomplishment of the crossing of the English Channel by aeroplane, an event which John Bull has been anxiously expecting for many months. Aviators have long been planning this flight, English eyes have been strained toward the French coast for a sight of the first comer by air, and statesmen also have been speculating as to the political results of such a trip; and at last the trip has been made. A Frenchman, M. Bleriot, starting from French soil, on a French aeroplane, successfully crossed the twenty-one miles of choppy sea that has separated Albion from her ancient enemy from time immemorial, and after a flight of thirty-seven minutes landed safely near the cliffs of Dover, receiving the warm congratulations of Frenchmen and Britons alike. M. Bleriot, after a trial spin, started in his monoplane at 4.35 A.M. on Sunday morning, July 25. We quote a part of his own picturesque description of the flight:

I begin my flight steady and sure toward the coast of England. I have no apprehensions, no sensations,—*pas du tout*,—not at all. The *Esco-pette* [a French torpedo-boat assigned by the government to follow M. Bleriot as a precaution in case of accident] has seen me. She is driving ahead at full speed. She makes perhaps twenty-six miles an hour. What matters it? I am making at least forty-two miles an hour. . . . Ten minutes are gone. I have passed



THE COURSE FOLLOWED BY M. BLERIOT IN HIS FLIGHT
ACROSS THE ENGLISH CHANNEL ON JULY 25.



M. BLERIOT AND HIS MONOPLANE AFTER LANDING AT DOVER FROM HIS CROSS-CHANNEL FLIGHT.

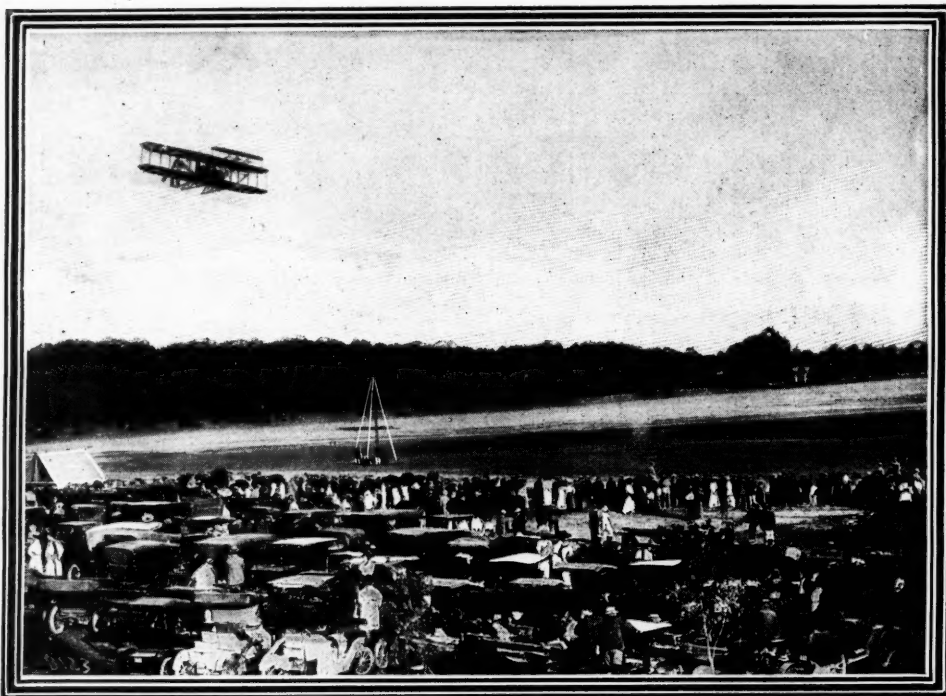
the destroyer, and I turn my head to see whether I am proceeding in the right direction. I am amazed. There is nothing to be seen,—neither the torpedo-boat destroyer, nor France, nor England. I am alone. I can see nothing at all. . . . I fly westward and reach Shakespeare Cliff. I see an opening in the cliff. . . . Once more I turn my aeroplane, and, describing a half-circle, I enter the opening and find myself again over dry land. . . . At once I stop my motor. . . . In two or three seconds I am safe upon your shore. Soldiers in khaki run up, and policemen. Two of my compatriots are on the spot. They kiss my cheeks. The conclusion of my flight overwhelms me. Thus ended my flight across the Channel.

M. Bleriot is a graduate of the French Polytechnique, the famous engineering school, and has already made many successful flights and won numerous prizes. As noted in our July issue, he was also one of the recipients of the Osiris prize awarded for the greatest advance achieved in science. His Channel feat won for him money prizes aggregating \$7500, as well as the presentation of gold medals by several aero clubs. Hubert

Latham, another French aviator ambitious to make the Channel crossing, attempted the trip a few days after Bleriot's flight and succeeded in getting within two miles of the English coast when his motor stopped and he dropped into the sea. French aviators have been especially industrious, and they are constantly making records of one kind or another. One of them, Roger Sommer, on August 7, in a Farman biplane, made a flight of 2 hours and 27¼ minutes. This is the endurance record for an aeroplane, and exceeds Wilbur Wright's flight of 2 hours and 20 minutes made in France on December 31 last. Henry Farman, the English aeronaut, on July 22, flew from Chalons to Suippes in France, a distance of 40 miles, in 1 hour and 5½ minutes.

The Wright Brothers at Fort Myer.

American interest in aviation is naturally centered largely on the performances of the Wright brothers, and the flights made by them at



Photograph by the Pictorial News Co.

THE WRIGHT BROTHERS' AEROPLANE IN ITS FLIGHTS AT FORT MYER, NEAR WASHINGTON, D. C., LAST MONTH.

Fort Myer last month in fulfillment of the Government tests attracted a great deal of attention. The War Department specifications called for a heavier-than-air machine capable of making an endurance flight of one hour with a passenger; a cross-country speed test of ten miles with a passenger, the speed to be not less than 38 miles an hour, and a further test comprising the carrying of sufficient fuel for a flight of 125 miles. The price to be paid for the aeroplane meeting these conditions was \$25,000, with a bonus of \$2500 for each mile in excess of forty attained in the trial flight. These conditions were all successfully met by the Wright brothers. On July 27, Orville Wright, carrying Lieutenant Lahm with him in the machine, made the record flight for an aeroplane carrying two men. The time was 1 hour, 12 minutes, and 36 seconds. A few days later,—on the 30th,—Mr. Wright made a successful cross-country flight of 10 miles, with Lieutenant Foulois as passenger. The direction taken was over rough and woody country, to Alexandria, Va., and back, the machine rising at times to a height of 400 to 500 feet. The speed attained aver-

aged over 42 miles an hour, thus winning for the inventors a bonus of \$5000.



MR. HUBERT LATHAM.

(The French aviator who almost succeeded in duplicating Bleriot's cross-Channel flight.)

*Other
Aeronautical
Activities.*

This cross-country flight of ten miles was surpassed in distance by Mr. Charles F. Willard, who flew twelve miles last month in a Curtiss biplane, although the country covered was not as rough as that included in the Wright flight. Mr. Willard is a pupil of Mr. Glenn H. Curtiss, the American aeronaut, who took part in the races of the "Week of Aviation" at Rheims, beginning on August 22, in which monoplanes, biplanes with tails, and biplanes without tails, as well as dirigible and spherical balloons, to the number of forty-six machines, were entered. Having tested the Wright aeroplane and purchased it, the American Government is the first to secure an aeroplane for the use of its War Department, although several European governments are becoming actively interested in this kind of flying machine. Orville Wright is now in Germany with a view to selling some of his aeroplanes to the German government. He will make a series of public

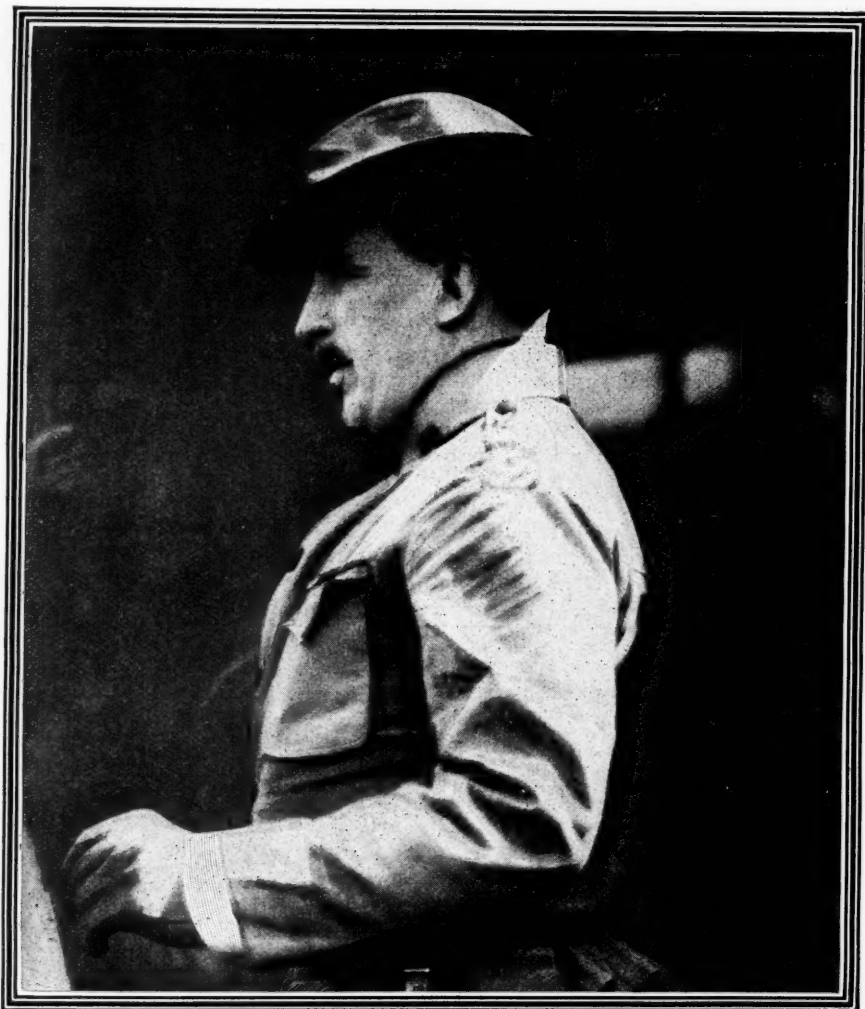
flights in a machine of his type "made in Germany," at the Tempelhof Parade Ground, just outside of Berlin, where the Emperor will probably be a spectator. Count Zeppelin is scheduled to make another long flight with his dirigible balloon, this time going completely from Friedrichshafen to Berlin, a journey of about nine hundred miles, which he came within seventy miles of making during his famous flight at the end of May. The expected meeting between Orville Wright and Count Zeppelin at Berlin will, no doubt, result in an interesting interchange of opinion on the subject of aerial navigation, particularly from the standpoints of the two different types of flying machine which these famous inventors represent.

Wellman Starts for the Pole. Closely connected with the subject of aerial navigation is the fresh attempt of Walter Wellman to reach the North Pole in his huge dirigible balloon, the *America*. For four years Mr.



JOHN BULL: "I was never made for flying."

From the *Herald* (New York).



MAJOR-GENERAL LEONARD H. WOOD, COMMANDING THE DEPARTMENT OF THE EAST, AND CHIEF UMPIRE IN THE "MIMIC WAR GAME" THAT ENDED AUG. 20.

Wellman has been preparing for this journey, and although a start was attempted in 1906 and again in 1907, conditions were not favorable on these occasions and the trip was postponed. Mr. Wellman planned to try again this year, however, and having made all due preparation and gotten his great balloon ready, he sailed with a favorable wind from Spitzbergen on Sunday, August 15. Mr. Wellman's Arctic airship is the second largest of its kind ever built, with a lifting capacity of about ten tons. It carries a crew of three men, 6000 pounds of gasoline for the engines, a food supply for a year,

and sledges, dogs, and a lifeboat, for land and water travel. Mr. Wellman estimated that with favorable conditions the Pole could be reached from Spitzbergen in from three to five days. He had sailed only thirty-two miles from Spitzbergen, however, when the guide-rope, to which was attached 1000 pounds of provisions, parted suddenly and the voyage had to be abandoned.

*Our
Mimic War
Game.*

Much attention was attracted last month to a series of military maneuvers in New England undertaken jointly by the regular army and

troops of the national guard from several Eastern States. In all, about 16,000 men participated in engagements occupying four days. The city of Boston was invested by a besieging army of 9000 men and defended by 7000. The invading troops gave an interesting object-lesson in the modern method of provisioning an army, the base of supplies being moved each day with the advance of the troops. It is believed that these maneuvers will exert a most helpful influence on the training of the national guard. We hope to present next month a somewhat detailed account of the movements in this war game, with an explanation of the strategic points and the technical military tests involved.

From a strike of coal workers in the Nova Scotia mines of the Dominion Coal Company, which began late in July, an important labor situation has developed in the Dominion of Canada. Coal mining is one of Canada's great industries, and the strike itself resulted in a temporary tieup of the entire business. More important, however, than the actual strike has been the point developed by the opposition between the Canadian labor organizations and the American labor unions on one hand and the subordinate Canadian unions, which are made up largely of foreigners, on the other. The chief Canadian labor organization, which is affiliated closely with the American Federation of Labor, is known as the Dominion Trades and Labor Council. There are, however, in Canada two other organizations of workmen,—the Canadian Federation of Labor, composed largely of French Canadians, and the Provincial Workman's Association, of Nova Scotia. The last named has a large number of Belgians, Italians, and other foreigners in its membership. For many years there has been evident international influence in Canadian strikes, and the recent situation was significant because it sharply defined the issue between two radically different views: those of the American Federation of Labor and the Dominion Trades and Labor Council, that "from an industrial standpoint the labor interests of the continent are one and should know no national boundaries," and the attitude of the Canadian Federation of Labor, which is strongly opposed to internationalism in any form. It seems probable as we go to press with this number of the REVIEW that the special strike in question will not be effective, public opinion being rather inclined

to go against the mine workers for their alleged submission to "American domination."

In an editorial summary of the views of its correspondents all over the world regarding the effect of the Payne Tariff Law on foreign industry and commerce, the London *Times* recently made the impressive and rather surprising statement that since the first publication of the bill last March "the British and Canadian diagnosis of the symptoms has been more correct than it has been in America." The German and French attitude toward the new tariff is alluded to elsewhere. In Great Britain, says the *Times*, "trade and commerce will receive very little benefit from the revision." Canada, if we are to take the verdict of some of her representative journals, has been severely hit in some of her more important industries. According to the leading journals printed in English in the Dominion, the new tariff bill is a plain indication that in the future (we quote from the *Toronto Globe*) "the United States is not going to purchase anything from Canada that she can possibly produce at home." Most of the journals devote considerable attention to the retaliatory attitude on wood pulp, regarding it as a "stroke against Canada," although, as the *Toronto Globe* says, this will "probably lead to the prohibition of the export of wood pulp from Canada with the object of building up the paper industry of the Dominion."

The election of new presidents in Colombia and Venezuela, the beginning of the presidential campaign in Mexico and the continued strained relations between Argentina, Bolivia, and Peru over the decision in the boundary dispute between the two latter countries were the subjects of most interest to the world in general last month in the history and activities of Latin Americans. The opposition in Colombia to General Reyes, already alluded to in these pages, arising from that statesman's position with regard to the Colombian-Panamanian-American boundary treaty, resulted in General Reyes' resignation. On August 4 Dr. Gonzalez Valencia was elected president by the National Congress to fill the unexpired term of General Reyes. Dr. Valencia immediately appointed an entirely new cabinet. In Bolivia the first part of August was marked by the retirement of President Ismail Montes, who was strongly opposed to

Canadian
Opinion on the
Payne Tariff.

"International-
ism" in Cana-
dian Labor.

Latin-
American
Happenings.

the boundary award made by Argentina. His successor, Señor Elidore Villazon, was inaugurated on August 12. Señor Villazon is believed to favor acquiescence in the Argentine decision, although it has been unfavorable to Bolivia.

*British Politics
of the
Month.*

The questions uppermost in the minds of the British people during the past few weeks have been "What will the Lords do with the budget?" "What effect will the actual flight across the British Channel by the French aeroplane of M. Bleriot have upon British insularity?" and "What measure of success awaits the new military plan formulated and discussed at the Colonial Conference on Imperial Defense?" It is generally held by politicians of all parties that the Peers will do all the harm they dare to the budget short of actually throwing it out altogether. Of course the flight of the daring French aeronaut was not a record one for either distance covered or time spent in the air. Its sensational significance lies in the fact that for the first time in history a for-

eigner landed in Britain by a route which the British navy was powerless to obstruct.

*A
Reconstructed
British Army.*

Lord Roberts' plan for imperial defense, discussed and eventually adopted at the Colonial Conference, held in London during the first days of August, provides for what will amount to universal conscription. The same method of training and organization adopted and followed in all the colonies as well as in the United Kingdom will, in Lord Roberts' judgment, enable the Empire in time of war to put in the field forty-six divisions, which will just equal the strength of the twenty-three army corps of Germany on a war footing. The delegates at the Colonial Conference of the four self-governing colonies, Canada, Australia, New Zealand, and the newly constituted state of South Africa, unanimously adopted the Roberts scheme. Among other topics which engaged the attention of the British people during July and August were the passage of the second reading in the Commons (on August 16) of the Union of South Africa Bill, providing for the official inauguration of the Union of the United States of South Africa; the publication of the report of the special commission exonerating Admiral Sir John Fisher from blame in the charges brought against him by Lord Charles Beresford; the visit, made in July, by Czar Nicholas of Russia to King Edward, and the great review in the Thames last month, during which almost the entire British naval strength passed in review before the British King.

*France's
New
Premier.*

It is one of the anomalies of the French parliamentary system that the resignation of a ministry does not necessarily, or even generally, mean the accession to power of the opposition. The only necessary result of a cabinet fall in France is the resignation of the premier. The cabinet may be reconstructed by a simple shifting or rearrangement of portfolios, with a new premier of the same political faith as the outgoing minister. The result of Clemenceau's resignation late in July was merely another Clemenceau ministry with Clemenceau left out. M. Briand, the new premier, has been the former prime minister's chief lieutenant and aide, and stands for the same ideas in politics. He is a practical man of decided force. In his own words, he is "a man of realization." It was he who engineered, through the Deputies three years ago,



THE LATEST FRENCH INVASION OF ENGLAND.

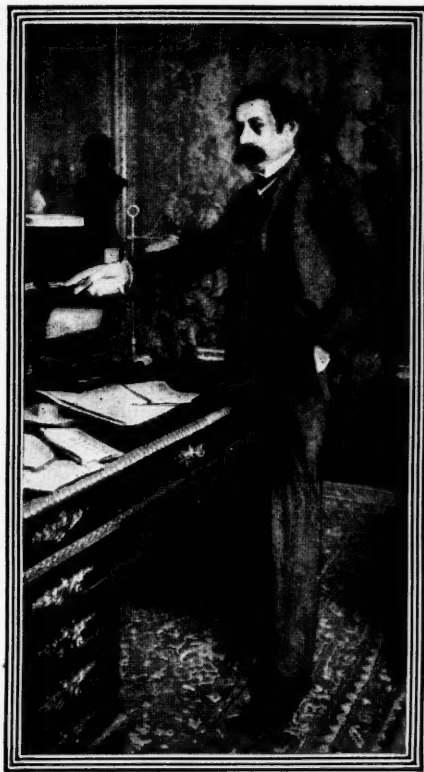
SHADE OF THE GREAT NAPOLEON (watching the Bleriot aeroplane, his own ships, and the British navy, and sadly recalling his own disastrous attempt to invade England in 1803): "Alas, Bleriot, you have come too late."

From *Le Livre* (Paris).

the Church Separation law. He is generally known as a Socialist, but either because France is such a highly socialized state or because M. Briand's socialism is of itself so mildly conservative in form it is a significant fact that his advent to power has not affected in any discernible way the steadiness of securities on the French market.

*The
Reconstructed
Cabinet.*

The cabinet as reconstructed consists of: Aristide Briand, premier, whose official titles are President of the Council and Minister of the Interior and Public Worship; M. Louis Barthou (Justice), Stephen Pichon (Foreign Affairs), Georges Cochery (Finance), General Jean Jules Brun (War), Admiral Boué de Lapeyrière (Navy), Gaston Doumergue (Public Instruction), Alexandre Millerand (Public Works, Posts, and Telegraphs), Jean Dupuy (Commerce), Joseph Ruau (Agriculture), Viviani (Labor), and Trouillot (Colonies). In his "introduction" speech before the Chamber of Deputies, on July 27 Premier Briand announced that the remainder of the present session of parliament would be devoted to passing the budget and the income-tax bill. The premier's declaration commits the new government to the foreign policy of the outgoing cabinet. A vote of confidence was taken at the close of Premier Briand's speech, the figures being 306 to 46. Other topics inter-



M. ARISTIDE BRIAND, THE NEW FRENCH PREMIER.
(Photographed in his office in the Elysée Palace.)



THE SPANISH FANDANGO OF 1909.

(Between the war in Morocco and the revolutionary outbreaks at home it is not for joy that the Spanish people are dancing this summer.)

From the *World* (New York).

esting the French people during the past few weeks have been the visit of Czar Nicholas, of Russia, to Cherbourg, the concern of French merchants and commercial bodies in the new American tariff, and the sensational flight of M. Louis Bleriot across the British Channel.

*The
Troubles of
Spain.*

By far the most critical period in Spanish history since the Iberian kingdom's war with the United States began in the middle of July with the serious revolutionary outbreaks against a vigorous prosecution of the long drawn out Moroccan campaign. Spain, it will be remembered, holds a few points on the Mediterranean coast of Morocco. She occupies other points as "mandatory" of combined Europe, according to the terms of the Algeciras Convention. From her position as the nearest European nation to Africa, with the Moroccan coast almost within sight of her shores, Spain has a greater stake than any other nation of Europe in the fate of the



DON CARLOS, THE LATE BOURBON PRETENDER.

Sheriffian Empire. Since the agreement of combined Europe at Algieras the Spanish Government, having grave problems of an economic nature to face at home and being perennially short of funds, has acquiesced in France's position as the predominant power in Moroccan affairs. Of the points occupied by Spain in Morocco, the principal ones are Ceuta, a stronghold opposite Gibraltar, and Melilla, a point near the Algerian frontier. During the past few years Spanish military forces have contented themselves with maintaining their power in these two points, leaving to France the general policing of the country.

*Moor vs.
Spaniard
Again.*

The Mediterranean shore of Morocco, known as the Riff coast, has never been actually subdued by Spain, and constant clashes with the natives have marked Spanish occupancy. Behind

Melilla is a mountain region occupied by fanatical Arab tribes, chief among them being the Kabyles. Early in July a party of Spanish workmen engaged in repairing a bridge near Melilla were attacked by some natives and in the fracas several Spaniards were killed. While the Riffians were preparing to burn the bodies of their victims the Spanish governor appeared with a force of regular troops, and, although he defeated the natives in a spirited engagement, he was forced to retreat. This partial reversal of Spanish influence revealed the weak condition of Spain's forces in the region, and the necessity was at once seen for dispatching a large force to regain and hold the ground that had been lost. General Marina was sent to take charge of all the Spanish forces and to head a punitive expedition, to which the Moors replied by attacking all the garrisons upon the edge of the strip of country inhabited by Europeans. It is estimated that from 40,000 to 50,000 natives were in arms during late



From the *Sphere* (London).

THE LOCATION OF SPAIN'S PRESENT TROUBLES AT HOME AND ABROAD.



DON JAIME, THE NEW SPANISH PRETENDER.
(Son of Don Carlos and at present a colonel in the Russian army.)

July and early August, all actively engaged in attacking Spanish outposts.

*Why Spaniards
Oppose
the War.*

Early in August General Marina, finding the troops at his command utterly inadequate to the task assigned them, asked for additional forces amounting to 40,000 men. The ordering out of these troops for service in Morocco instantly precipitated a popular upheaval of sanguinary and revolutionary proportions throughout Spain, but particularly in Catalonia. The war in Morocco has always been extremely unpopular with the people of Spain not only because it has cost a great deal of money and the lives of many soldiers and sailors, but because, as it is now generally charged, Spain's military activities on the Moroccan coast have been exercised largely, if not solely, in the interest of certain corrupt commercial schemes. Several mining concessions (so we are informed by the Fez correspondent of the *London Daily Chron-*

icle) held by members of Spanish noble houses were in danger, and, according to this authority, just as a timber concession in Korea caused the actual collision between Japan and Russia, the refusal of the Sultan of Morocco to confirm these mining concessions brought about bloodshed on a large scale on the Riff coast. It should not be forgotten in this connection that the Riff tribes, while nominally subject to the Sultan of Morocco, are really independent. The mining concessions in question are reported to have been given by a pretender to the Moroccan throne, and Mulai Hafid has announced that he positively declines to ratify concessions made by a rebel actually under arms against his authority.

*Plight
of the
Spanish.*

With all this knowledge or rumor circulating throughout Spain it is little wonder that the announcement of the expedition of 40,000 men, drawn from all parts of the kingdom, to Morocco should have precipitated the riots and anti-Government demonstrations. Moreover, a larger proportion of the Spanish reservists are married and have families than is the case in other European armies, and the general poverty of the Spanish population would leave these families, in case of the death of the head of the house, in want and destitution. It was the wives, sisters, and daughters of the reservists who made up



SEÑOR DON ANTONIO MAURA, PREMIER OF SPAIN.



Photograph by Paul Thompson, New York.

GENERAL MARINA, COMMANDING THE SPANISH FORCES IN MOROCCO, LISTENING TO A MOORISH SPY IN HIS SERVICE.

cratic and "Separatist" in spirit and at odds with the central government. The army has been particularly unpopular in this section of Spain, which is the most progressive economically, and the laborers and factory hands of Barcelona not only refused to go with the reserves, but actually barricaded the roads and tore up the railway tracks so that the men already enrolled could not proceed to the front.

For several days late in July riot and pillage, murder and outrage of the most horrible kind devastated Barcelona, during which, on the one hand, the garrison troops refused to fire upon

a surprisingly large proportion of the mobs which rioted in Barcelona and other Catalonian cities against the sending of the troops. The Catalonians have always been demo-

the people, and, on the other, the populace attacked the regulars and burned and looted the monasteries and convents. Martial law was proclaimed throughout the kingdom and



Photograph by Paul Thompson, New York.

SPANISH SOLDIERS CARRYING IN THEIR WOUNDED AFTER THE FIGHTING WITH THE MOORS AT MELILLA.

severe repressive measures at once put into effect. Owing to the fact that the Spanish press censorship in time of popular uprising is more strict than that in any other European country, it has been difficult, even weeks after the occurrences, for the outside world to know the exact truth. The unfavorable status of the Moroccan war has undoubtedly been used by agitators for the purpose of political propaganda, and it is being freely charged that the new pretender to the throne, Don Jaime, head of the Carlist faction, had hoped to ride into popular favor on the wave of popular disapproval of the war.

*Gravity
of the
Situation.*

It is a bad state of affairs. While Spain is at war with the Moors in Morocco the Spanish Government has to go to war with its own people because they do not approve of the war with the Moors. On another page this month (300) Professor Guijarro, of the University of Madrid, sets forth calmly the extremely difficult political and economic condition of Spain to-day. There is undoubtedly an economic awakening in the kingdom, and it is probable that Morocco will be needed for the industrial expansion which will follow the economic revival. The Moorish country is, indeed, the logical field for Spanish capital to find employment in its mines, agriculture, and commerce. The Madrid government has a very intricate problem to solve, and the young King, who, though perhaps over-given to sport, is patriotic and ambitious, has before him a situation that might baffle a much older and more experienced ruler. The question has apparently proved too much for Premier Maura, who has repeatedly endeavored to resign his office. Señor Maura is an able lawyer and a man of personal probity. He believes thoroughly in the need for liberal economic reforms, but has not shown himself strong enough to successfully combat the reactionary tendencies of the old régime, which still clings tenaciously to power in Spain.

*Problems
Before the
New German
Chancellor.*

From the comments in the German papers on the appointment of the new Imperial Chancellor as well as from the expressions of opinion upon the character and equipment of Dr. von Bethmann-Hollweg, it is evident that the country as a whole is satisfied with the man whom Kaiser Wilhelm has chosen to succeed Prince von Bülow. Judgment as to his abilities for administration, particularly with

regard to foreign policies, is, of course, reserved, but there is evident a general satisfaction at the appointment and willingness to let the new premier have the fullest, freest chance to indicate his policies. There has now become evident one reason why the ex-Chancellor was not anxious to dissolve the Reichstag. Although it is an "off year," the by-elections in Bavaria and the Palatinate during the first part of August resulted in strong anti-government victories. In one division the Social Democrats by a large majority of more than 900 votes captured a seat in the Reichstag which the National Liberals had held for more than forty years. The general results of these elections were a Socialist gain of more than 2000 votes and a loss to the National Liberals and Clericals of more than 4000. The result of this voting may be taken as an indication of popular hostility to the new taxes. German commercial circles are dissatisfied and resentful in their comments on the new tariff law of the United States. The general point of view seems to be that the most favorable treatment possible must be conceded by Germany to the United States, since the former is so dependent on our trade for many of its



THE DOWNFALL OF MONARCHS AND MINISTERS.

(In the "falls" of Sultan Abdul Hamid, Shah Ahmed Riza, Chancellor von Bülow, and Premier Clemenceau, the cartoonist of *Kladderadatsch* sees a tendency of the present political year worth pondering over.)



KING GUSTAV, OF SWEDEN.

(Who, though accused of reactionary, "anti-labor" tendencies, was very active last month in endeavoring to bring about peace in the Swedish general strike situation.)

staple raw materials. The agrarian leaders and journals, on the other hand, warn the new Chancellor that the success of his career will be determined by the firmness he now shows "in dealing with the exorbitant demands of the Yankees."

*The
Leipzig Demi-
Millennium.* For more than one reason American educational circles have been interested in the recent celebration of the five hundredth anniversary of the University of Leipzig. For several decades Leipzig was the German University most attractive to American students, and even today it is very largely attended by young men from the United States. For another reason the old university has a timely interest to the American people. During the celebration an honorary degree was conferred, in his absence, on ex-President Roosevelt. The news, which was telegraphed to Mr. Roosevelt in Africa, contained a significant quota-

tion from the presentation address, as follows:

Ready for war, courageous, and yet a promoter of peace; a man endowed with all statesmanlike qualities; an honor to the civic crown; one with ready sympathy with and understanding of the German spirit; the ex-President of the United States, Theodore Roosevelt.

Visiting delegations came from all over the world, President Schurman, of Cornell, speaking for American universities and university life. A very significant address was made by Professor Mahaffy, of Dublin University, on behalf of the institutions of England and her colonies, in the course of which he said: "If the day arrives on which you hope to conquer our mother country, come and be welcome; but conquer us by science, which costs no blood." The University of Leipzig was founded in 1409. It owes its origin to the removal of a large number of German students in that year from Prague, Bohemia, as a consequence of disputes between the Bohemians and Germans.

*Labor
and Capital
in Sweden*

The relations between labor and capital in Sweden have been strained almost to the breaking point for a decade. The Swedish social order is founded on essentially an aristocratic basis, being the outgrowth of the long continued predominance of agriculture. The rapid growth of manufacturing and other industrial interests, however, during very recent years has disturbed the old social order. With increasing frequency members of the Swedish Diet have represented industrial constituencies and the merchant class has had a rapidly growing influence in shaping the political and economic policies of the kingdom. The late King Oscar was a most democratic and liberal man. His successor, King Gustav, is generally believed to be conservative, almost, if not quite, to the point of reaction. Therefore, while the government since King Oscar's death has been veering in the direction of reaction, the progress of industrialism has gone on and the capitalist and workman have been drawn further apart.

*A
General
Strike.*

Early in August the Swedish labor leaders, believing that they had gathered strength sufficiently to show their hand, ordered a general strike. They had been angered by the open threat of a lockout by the powerful association of manufacturers. The strike involved more than 300,000 workers, or more than one-

twentieth of the entire population of the country. The Allied Trades Unions which engineered the strike, declined to accept the decision rendered by the Government Board of Arbitration, a decision which was essentially a compromise between the opposing parties, and which was accepted by the Employers' Association. All government employees, including workers on railways and in the post-office, joined in the strike. Although no violence or bloodshed has been reported, for more than a week Stockholm, the capital, was tied up and for two days ran short of provisions, so that a famine was threatened. The labor parties in both Norway and Denmark sent contributions to the Swedish strikers. At one time the strike was so general that the capital was in darkness, no gas or electric light being obtainable, and even the work of the gravediggers and undertakers was done by the soldiers. King Gustav called the leaders of both parties before him, but could not persuade them to agree or to accept government arbitration. After ten days the railroad employees began to return to their work, and it was apparent that the strike would eventually collapse of its own weight. The government is preparing an important new labor law for submission to the Diet at its next session.

*Forcing Crete
to Remain
Turkish.*

For less than a month the little island of Crete was left by the four so-called "protecting powers,"—Great Britain, Russia, France, and Italy,—to enjoy its dream of union with Greece. On July 27, in accordance with the plan agreed upon last year, and already recounted in these pages in detail, the gendarmerie of these powers evacuated the island and left the Cretans to administer their own government and police their own territory. For ten years, it will be remembered, indeed since the close of the Turko-Greek War, these four powers had guaranteed Cretan autonomy under the nominal rule of the Turkish Sultan, but with a Christian Governor, Alexander T. Zaimis, who was known as High Commissioner, appointed by the Greek King. In October of last year, after the Austrian and Bulgarian coups in the Balkans, Crete informally annexed itself to Greece. The protecting powers withheld their assent to this move, but ever since that time the Cretans have flown the Greek flag, administered Greek law, and acted as if they were actually Greek subjects.

*Lowering
The Greek
Flag.*

A very large proportion of the inhabitants of the island are Greeks, and the authority of Turkey has been for years only of the most shadowy kind. The Young Turk régime at Constantinople, however, has always regarded the retention of Crete, even at the expense of a war with Greece, as absolutely necessary to its continued ascendancy at home, particularly in view of the popular resentment against the new government because of the loss to Turkey and Bulgaria and the two provinces last year annexed by Austria. During the first week in August several notes passed in rapid succession between the foreign offices at Athens and Constantinople, and at times diplomatic relations were on point of rupture. The Greek government, however, maintained a perfectly correct attitude, and on August 18 at the earnest solicitation of the Porte a party of sailors from the warships of the four protecting powers landed at Canea and hauled down the Greek flag from the bastion of the fort. The feeling in favor of annexation has been so strong in both Greece and Crete that it will be necessary for the foreign gendarmes to remain indefinitely on the island.



WHAT WILL BE THE FINAL FATE OF CRETE?

THE FOUR "PEACE" POWERS: "Look out, young man, we may have to pull away your chair after all."

From Kladderadatsch (Berlin).



THE TWELVE-YEAR-OLD BOY WHO HAS SUCCEEDED HIS FATHER AS SHAH OF PERSIA.

(Mohammed Ali Mirza, Shah of Persia, who succeeded to the Peacock Throne on the death of his father, in January of 1907, formally abdicated,—or perhaps one should say was deposed,—in July. He has been succeeded by Sultan Ahmed Mirza, who, although not the eldest son of the ex-Shah, was the heir-apparent, the mother of his elder brother not being a Kajar Princess. The new Shah, who was proclaimed under the title of Ahmed Mirza, with Azad-Ul-Mulk, head of the Kajar tribe, as Regent, is but twelve years old. He wept bitterly when the moment came for him to leave his predecessor on the throne and his mother, and, says the *London Times*, "it required a stern message to the effect that crying was not allowed in the Russian Legation before he dried his eyes.")

The Baby Rulers of Asia.

A French political writer in the *Revue des Deux Mondes*, in a study of the progress of constitutionalism throughout the Orient, points out the significant fact that at present the destinies of more than 400 millions of people in Asia are nominally under the control of two children,—the present Emperor of China, Hsüan-t'ung, who rules, through a regent, over more than 400 million, and the new Shah of Persia, Ahmed Mirza, who is a lad of only twelve. His government is also conducted through a regent, his uncle. Ahmed Mirza seems to be a mild-mannered, normal lad of ordinary intelligence and affectionate disposition. The entire world felt more than a perfunctory interest in this boy

last month when it was learned that he became frightened at the ceremonies of state and ran from the palace weeping, begging to be taken to his parents. The ex-Shah, his father, who is still under Russian protection, is to receive a pension from the existing government.

The Sugar Scandal in Japan.

It is not a cheerful or encouraging picture of national prosperity and progress that is presented by the Japan of the last two months. While the ninth "Financial and Economic Annual," just published by the Japanese Government, declares that national affairs have returned to their normal condition, there is also much truth in the other statement found elsewhere in this publication that Japan is now facing the consequences of "reaction from the sudden rise and expansion of enterprise" which followed the termination of the Russo-Japanese War, as well as the "stagnation of Chinese export trade and the effect of the panic in the American markets." A startling and sensational indication of unsuspected commercial and political corruption was given in July by the conviction of twenty-three members of the Imperial Diet for complicity in the "graft" revealed in the recent sugar scandal. Five directors of the Great Japan Sugar Company were at the same time convicted of bribing the nation's representatives. An unusual but encouraging feature of the trial was the opinion of



THE DAY OF "YOUNG ASIA."

(Fischietto, Turin, points out the fact that nearly one-third of the human race are to-day under the nominal rule of two children: the baby Emperor of China and the boy Shah of Persia.)



NEW TRADES FOR RETIRED ORIENTAL DESPOTS.

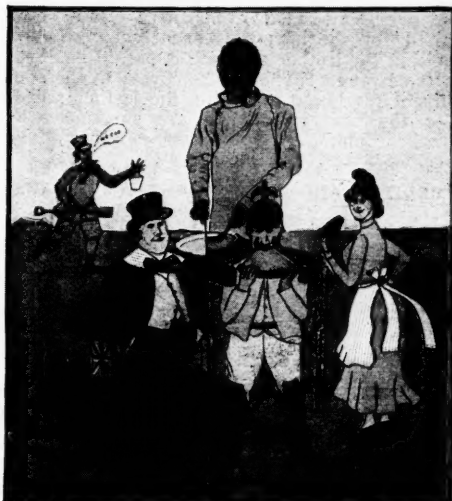
(*Borsszem Jankó*, of Budapest, the leading Hungarian comic journal, publishes this on the suggestion,—so it says,—of a Persian artist.)

the newspaper press, which insisted that the eminence of the offenders should call for additional severity of punishment, "since their crime was aggravated by indifference to their duty as moral examples." The court took this view and the sentences were made accordingly severe.

The growing suspicion and hostility between the Chinese and Japanese governments and peoples are emphasized by the dispute over the Antung Railway. This line, running from Antung to Mukden (a distance of somewhat less than 200 English miles), is to be reconstructed by the Japanese, in accordance with what they claim are their rights, set forth in the Peking Treaty of 1905, which says: "China agrees that Japan has the right to improve the Antung-Mukden Railroad so as to make it fit for the conveyance of commercial goods of all nations." This is interpreted by the Japanese to mean an authorization to widen the gauge to standard and generally to alter the construction. China, however, objects to this as too radical a change and as giving Japan too much "strategic advantage" in Manchuria. It was reported late last month that China had finally agreed to permit Japan to go on with the work in her own way. In this as well as in the dispute over Russian jurisdiction in Har-

bin and other municipalities on the Siberian-Chinese frontier, already explained in these pages, is indicated a growing realization on the part of China of her strength and of her position as an independent nation.

It was definitely decided last month that there would be American participation in the Hankow-Sze-chuen Railroad loan, the amount of which is to be increased from \$27,500,000 to \$30,000,000. Of this latter sum American bankers are to get one-fourth, the other three-fourths going to British, French, and German interests. Americans, moreover, are to have equal opportunity to supply material for the main line and all its branches. They will appoint subordinate engineers and will also participate in future loans. The significance of this achievement is not merely in the amount of money involved. It lies also in the principle, now undoubtedly established, that the products of American industries are to be used in the construction of Chinese railways and that American engineers will have the opportunity to assist in such construction in the future. It is interesting to note, in passing, that the Chinese Ambassador to this country, Dr. Wu Ting-fang, has been recalled and that Dr. Chang Yin-tang has been appointed to succeed him.



CUTTING THE CHINESE LOAN PIE.

(In this way the *National Review*, published in English in Shanghai, sets forth the competition of England, France, Germany, and the United States for shares in the loan soon to be floated to finance the Hankow-Sze-chuen railroad.)

RECORD OF CURRENT EVENTS.

(From July 21 to August 20, 1909.)

PROCEEDINGS IN CONGRESS.

July 26.—The Senate adopts a resolution providing for the transmission of the proposed income-tax constitutional amendment to the Governors of the States.

July 30.—In the House, Mr. Payne (Rep., N. Y.) presents the report of the tariff conference committee and explains the changes made.

July 31.—The Senate passes the Urgent Deficiency Appropriation bill carrying an item of \$25,000 for the President's traveling expenses. The House adopts the conference report on the Tariff bill by a vote of 195 to 183, twenty Republicans voting in the negative and two Democrats in the affirmative.

August 2.—The Senate begins discussion of the Conference Committee's report on the Tariff bill. The House adopts the report on the Philippine Tariff bill.

August 4.—In the Senate, a concurrent resolution making corrections in the leather schedule of the Tariff bill is reported. The House passes the Urgent Deficiency Appropriation bill.

August 5.—The Senate adopts the conference report on the Tariff bill by a vote of 47 to 31, seven Republican Senators,—namely, Beveridge (Ind.), Bristow (Kans.), Clapp (Minn.), Cummins and Dolliver (Iowa), La Follette (Wis.), and Nelson (Minn.),—voting against the report, and one Democrat, Mr. McEnery (La.), being paired for the bill; the concurrent resolution revising the leather schedule is passed and sent to the House. The House agrees to the concurrent resolution amending the leather schedule; the new committees are announced by Speaker Cannon. Both branches adjourn *sine die*.

POLITICS AND GOVERNMENT—AMERICAN.

July 27.—The Chicago grand jury, investigating police graft, brings thirteen indictments against resort keepers.

July 28.—The State of Missouri appeals the railroad rate cases in the United States Supreme Court.

July 29.—Virginia Republicans nominate W. P. Kent, now consul at Guatemala, for Governor and adopt a platform favoring local option with counties and cities as units.

August 3.—The Schmidt ordinance establishing three-cent fares for a part of the Cleveland street-car system is defeated at a popular referendum vote, the ordinance having been favored by Mayor Johnson.

August 4.—George M. Shippy resigns as chief of police of Chicago.

August 5.—President Taft nominates A. Piatt Andrew, of Massachusetts, for Director of the Mint. President Taft signs the Payne-Aldrich Tariff bill (see page 341).

August 6.—R. E. Cabell, of Virginia, is appointed Commissioner of Internal Revenue. Federal Judge Campbell, of Muskogee, Okla., orders the dismissal of 30,000 Indian land-alienation suits, involving 2,000,000 acres, brought by the Government in the interest of the Five Civilized Tribes.

August 9.—The Georgia Senate refuses to consider a report favoring the federal income-tax constitutional amendment.

August 10.—The Alabama Legislature unanimously adopts a resolution ratifying the income-tax amendment to the Constitution of the United States.

August 11.—The Georgia Legislature adjourns. The Washington Legislature meets in special session.

August 12.—The Connecticut Legislature defers action on the resolution providing for an income-tax amendment to the federal Constitution.

August 15.—A letter written by President Taft to Secretary Nagel directing that the census be kept out of politics is made public at Beverly, Mass., together with a list of 134 census supervisors. A call is issued for a conference of "progressive" New York Democrats.

POLITICS AND GOVERNMENT—FOREIGN.

July 22.—The British House of Lords begins the hearing of a test case to decide whether trade unions are entitled to make a levy on their members for the payment of labor representation in Parliament. M. Aristide Briand, Minister of Justice and Public Worship, is asked to reconstruct the French cabinet. A riot is caused in Madrid, Spain, by an attempt to prevent the departure of troops for Morocco.

July 23.—The Prime Minister of England addresses a great meeting in London in defense of the budget. A strong branch of the British Free Trade Union is established in Manchester. The new French cabinet is announced.

July 24.—Meetings at Hyde Park, London, to support the Liberal budget are attended by nearly 500,000 persons. M. Briand completes the French cabinet; Georges Cochery becomes Minister of Finance; General Brun, Minister of War, and Admiral de Lapeyrère, Minister of the Navy.

July 26.—General Rafael Reyes resigns the presidency of the Republic of Colombia. A general strike and martial law are declared at Barcelona, Spain.

July 27.—In the French Chamber a vote of confidence in the new ministry is carried by 306 to 46.

July 28.—Martial law is proclaimed over the whole of Spain. Mr. F. Holder is elected Speaker of the Australian Parliament. The British House of Commons adopts a strenuous

rule of closure in order to force a vote on the budget....The Colombian Senate accepts the resignation of President Reyes and fixes August 3 as the date for the election of his successor.

July 29.—The Cuban cabinet resigns.

July 30.—The Venezuelan Congress rejects ex-President Castro's manifesto justifying his own actions.

July 31.—The Danish cabinet resigns office.

August 3.—Gonzales Valencia is chosen by the Colombian Congress to fill the unexpired presidential term of General Reyes, resigned.

August 7.—General Tremau is chosen as commander-in-chief of the French army to succeed General La Croix.

August 10.—The Miguelista and Zayista factions of the Cuban Liberal party agree on fusion.

August 11.—The Venezuelan Congress, acting under the provisions of the new constitution of August 5, unanimously elects General Gomez, acting-president, as provisional president, to hold office until April 19, 1910....General von Einem, German Minister of War, resigns office....A new Bolivian cabinet is formed, with General Pando as Foreign Minister.

August 12.—Ellidore Villazon is inaugurated president of Bolivia to succeed Ismail Montes.

August 15.—The Cretan government resigns.

August 16.—A new Danish cabinet is formed under the premiership of Count Holstein-Ledreborg....A new Venezuelan cabinet is announced.

August 19.—The British House of Commons passes the bill for a South African constitution.

INTERNATIONAL RELATIONS.

July 21.—Moorish tribesmen make another attack on Melilla....French troops capture Abeshr, the capital of Wadai, after a sharp action.

July 22.—Delegates from the Turkish Parliament are entertained by the British Government at the House of Commons....Peru and Bolivia agree to review the boundary award recently handed down by President Alcorta of Argentina.

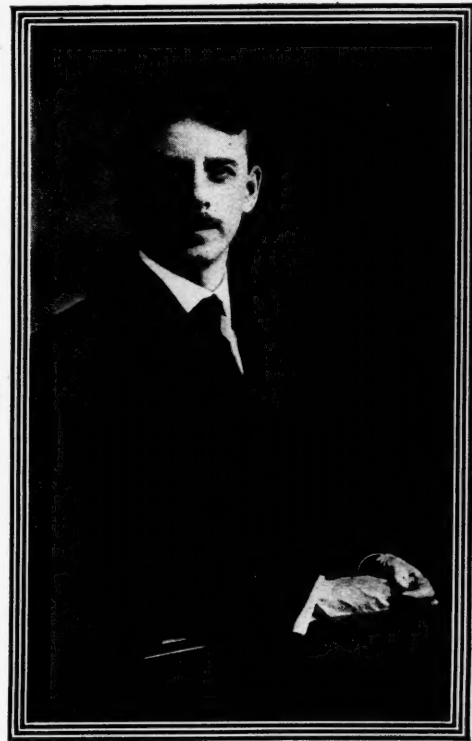
July 25.—The flags of the four protecting powers in Crete are hauled down.

July 26.—The Moors resume the attack on the Spanish troops at Melilla....The Venezuelan Government, owing to delay in settling the Crichfield and Oronoco claims, sends the protocol with the United States to Congress for approval....The United States demands reparation from Panama for outrages committed on American citizens....Transports conveying British, French, Italian, and Russian troops leave Crete, completing the evacuation....The transfer to Great Britain of the Siamese states Kelantan and Tringganu is completed.

July 27.—The Greek flag is hoisted at the barracks and fortress of Canea, Crete.

July 29.—The Moors attack Alhucemas, an island fortress near Melilla occupied by the Spaniards.

July 31.—The Russian Minister to China reopens the Harbin and Manchurian railway zone questions by the reimposition of taxes.



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MR. R. G. VALENTINE.

(The new Commissioner of Indian Affairs.)

August 1.—Another Spanish detachment is ambushed by Moors near Melilla, several officers being wounded....The meeting of the Czar of Russia and President Fallières of France apparently strengthens the Franco-Russian alliance in the direction of peace....A new patent treaty between the United States and Germany is promulgated.

August 2.—The Czar of Russia is welcomed in England by the King, the Prince of Wales, and other members of the royal family.

August 3.—Chile requests Bolivia to recall her *chargé d'affaires*, owing to alleged misrepresentation of Chile's attitude in the dispute with Peru....Negotiations for American participation in the Chinese railway loan are practically completed....A meeting of President Taft and President Diaz, of Mexico, at El Paso, Texas, is arranged through official correspondence between the United States and Mexican governments.

August 5.—China replies to the Russian note of July 2 regarding the opening of Sungari and other rivers to international trade.

August 6.—Turkey sends a note to Greece demanding a formal declaration that the latter country will not interfere in Cretan affairs....Japan informs China that work toward the improvement of the Antung & Mukden Railway will begin immediately....The State Depart-



THE NEW PENNSYLVANIA RAILROAD STATION IN NEW YORK CITY.

(The last piece of stone was placed in this structure on July 31, thirteen months after work was begun. The building is 788 feet 9 inches long and 430 feet 6 inches wide.)

ment at Washington gives notice that trade agreements with other countries must be abrogated under the terms of the Payne Tariff law.

August 8.—Bolivians at Guapai stone the houses of Peruvian and Argentine residents.

August 9.—In reply to Turkey, Greece declares that Crete being in the hands of the protecting powers the solution of the question of the island's future must be left to them; the Cretans strike the Greek flags....China practically withdraws her objection to Japan's reconstruction of the Antung & Mukden Railway....A treaty is signed between the United States and Argentina dealing with reciprocity and naturalization.

August 10.—As a result of conferences at Peking, assurances are given that the United States will get one-fourth of the loan for the construction of the Hankow Railroad....Japan accepts the Chinese proposal to resume negotiations on all questions in dispute except that of the Antung-Mukden Railway....Baron Takahira, Japanese Ambassador to the United States, leaves Washington on his return to his own country.

August 11.—A threat by the powers to reoccupy Crete causes Turkey to accept the Greek note regarding the island....The Darien Indians offer their adhesion to the republic of Colombia.

August 12.—China sends a note to the powers upholding its attitude toward Japan in the Antung-Mukden Railroad question.

August 13.—All the Spanish warships are ordered to Melilla....Turkey submits another note to Greece insisting on the formal declaration that the latter country has no ambition regarding Crete....A British battleship leaves Malta for Crete....President Villazon, of Bolivia, urges that the boundary dispute be settled by diplomacy.

August 15.—The Sultan of Morocco orders the Riff tribes to cease attacks on the Spaniards.

August 16.—The provisional committee governing Crete takes the oath of allegiance to Greece.

August 17.—The powers warn the Cretan Government not to attempt to prevent the hauling down of the Greek flag at Canea.

August 19.—Greece, in replying to the last Turkish note regarding Crete, leaves the question of the island's future in the hands of the protecting powers.

OTHER OCCURRENCES OF THE MONTH.

July 21.—A severe storm on the south coast of Texas causes thirty-eight deaths and a property loss of nearly \$1,000,000; Galveston, fortified by the new sea wall, sustains little damage and no loss of life.

July 22.—St. Petersburg, Russia, reports a notable decrease in cholera cases....The replica of Henry Hudson's *Half Moon* arrives at New York from Rotterdam.

July 23.—The London and Westminster Bank, Ltd., and the London & County Banking Company, Ltd., agree to amalgamate....The Canadian Conciliation Board refuses to admit the chief demands of the striking coal miners....Mahar Lal Dhinra, the murderer of Sir Curzon Wyllie, is sentenced to death at London after a trial lasting less than an hour....Mayor McClellan, of New York City, vetoes the proposed new building code.

July 25.—Louis Bleriot flies across the English Channel from Calais to Dover in his monoplane in less than thirty minutes.

July 26.—A historic pageant is performed at York, England, and a Welsh national pageant, with 5000 performers, at Cardiff....Forty thousand men quit work in Sweden; a general strike is called for August 4.

July 27.—The Spaniards sustain heavy losses in a battle with the Moors at Melilla....Orville Wright makes a new world's record for an aeroplane carrying one passenger in his endur-

ance test flight at Fort Myer, remaining in the air 1 hour, 12 minutes, and 36 seconds....The Youngstown Sheet & Tube Company announces the adoption of a profit-sharing plan with its employees....Common stock of the United States Steel Corporation is put on a 3 per cent. dividend basis.

July 28.—More than 500,000 British miners vote to strike in support of the Scotch miners in resistance to a wage reduction of sixpence a day.

July 29.—Professor Ennerrich, of Munich, announces the discovery of the action of cholera bacilli, which, he says, working on nitrogenous food, liberate free nitric acid.

July 30.—The Wright brothers successfully complete their aeroplane tests for the Government, the 10-mile straightaway flight, with turn, being made at a speed of more than 42 miles an hour....Earth shocks in Mexico destroy the town of Chilpancingo and half of Acapulco....The British Board of Trade, acting as mediator, upholds the protest of the Scotch miners against a reduction of wages....Speyer & Co., of New York, take \$16,500,000 of the Cuban $4\frac{1}{2}$ per cent. loan at $88\frac{3}{8}$Mrs. Ella Flagg Young is elected Superintendent of Schools for the city of Chicago.

July 31.—King Edward reviews the British fleet in the Solent....Another severe earthquake is felt in Mexico City....Fire destroys a large part of Osaka, Japan....The dirigible balloon *Zeppelin II*, sails from Friedrichshaven to Frankfort, a distance of 220 miles, at an average speed of 21 miles an hour....The Wright aeroplane is formally recognized at Washington as the arm of the aeroplane corps of the United States Army....The Pennsylvania Railroad completes the masonry work of its great passenger station in New York City.

August 1.—Acapulco, Mexico, is reported as entirely destroyed by a series of seventy-three earth shocks; a tidal wave sweeps the waterfront, but no lives are lost.

August 2.—Cotton prices advance from twenty-five to thirty points on the publication of a Government report showing a low percentage of the normal crop.

August 4.—The pageant of the Canterbury Pilgrims is presented by a cast of 2000 players at Gloucester, Mass.

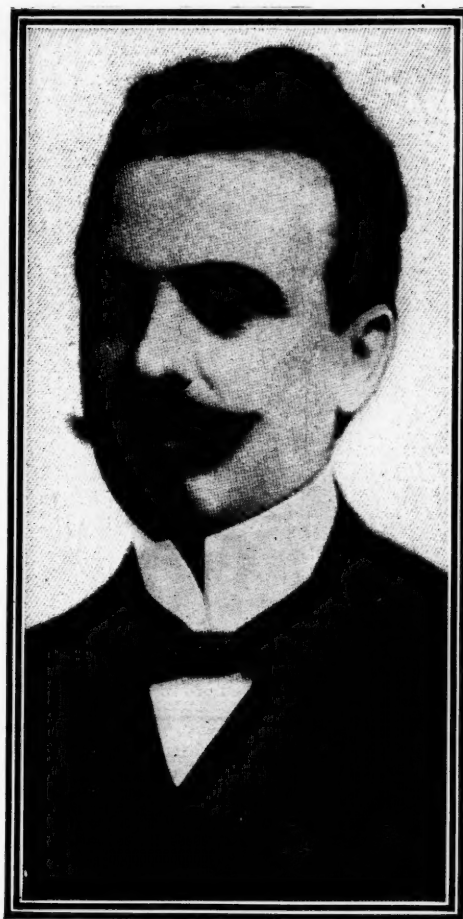
August 6.—President Taft leaves Washington for Beverly, Mass....The Western Electric Company receives a contract from the Chinese Government to install a telephone system in Peking.

August 7.—Roger Sommer, in an aeroplane, flies 2 hours, 27 minutes, and 15 seconds (unofficial) at Mourmelon-le-Grand, France.

August 9.—An extra dividend of one-half of 1 per cent. is declared on the common stock of the Canadian Pacific.

August 10.—The Duke of the Abruzzi establishes a new record in mountain climbing by ascending Mount Godwin-Austen to a height of 24,600 feet....The balloon *Sirius*, with four persons on board, crosses the Alps from Chamouni to Locarno.

August 12.—Fort William, Ont., is placed under martial law because of rioting by strikers.



DR. NILO PECANHA.

(Who as Vice-President of Brazil succeeded to the Presidency on the death of Dr. Penna.)

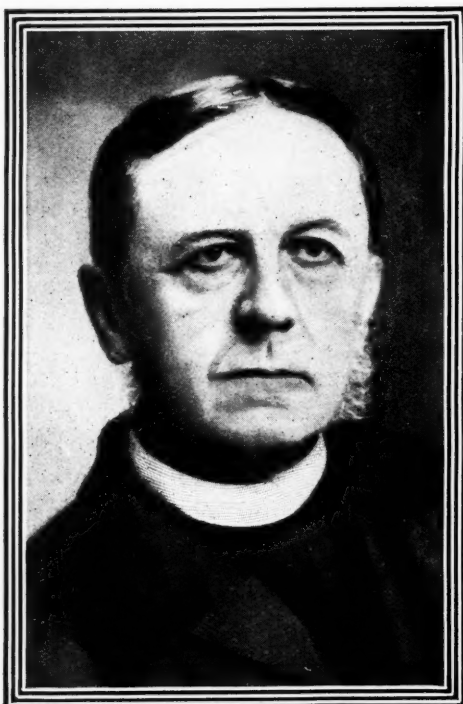
....The American Sheet & Tin Plate Company, in a suit filed in Pittsburg, asks damages of \$200,000 from fifty-six alleged leaders in the strike at its plants in Newcastle.

August 13.—The controversy between the Chicago street railways and their employees is settled at a conference of the leaders....Ex-Gov. S. R. Van Sant, of Minnesota, is elected commander-in-chief of the Grand Army of the Republic.

August 15.—Fire on the Cunard liner *Lucania* causes the vessel to be sunk in her dock at Liverpool.

August 16.—Mr. Curtiss makes three flights in his aeroplane at Rheims....Excessive heat is reported in the Middle West, the temperature reaching 110° Fahr. in Muskogee, Okla....Walter Wellman starts from Spitzbergen in his dirigible balloon for the North Pole.

August 17.—The railway employees in Sweden refuse to join the strike.



Photograph by The Bradley Studio, N. Y.

REV. W. R. HUNTINGTON, D.D.

(For a quarter of a century rector of Grace Protestant Episcopal Church, New York City.)

August 18.—A German fleet of ninety warships leaves Kiel for the summer maneuvers in the Baltic....President Bryan, of Franklin College, Indiana, is elected to the presidency of Colgate University, in New York.

August 19.—The mimic war game in Massachusetts comes to an end with the victory of the "Red," or invading, army....Seven cadets are dismissed from the United States Military Academy at West Point on approval of the President....The State of Arkansas files suits against sixty-five insurance companies, asking penalties of \$65,000,000.

OBITUARY.

July 21.—Samuel William Johnson, professor emeritus of agricultural chemistry at Yale University, 79....Herr Karpeles, the German writer and journalist, 61.

July 22.—William L. Riordon, writer on New York City politics, 48....Baron Detlev von Liliencron, the German author, 65....Prof. Thomas Bond Lindsay, of Boston University, 56.

July 23.—Sir Frederick William Holder, first Speaker of the House of Representatives of the Commonwealth of Australia, 59.

July 24.—Col. John Mehan, a well-known military and civil engineer, 82....Gustav Nichols, president of the Berlin Chamber of Commerce, 73.

July 25.—Robert Pitcairn, for fifty-three years connected with the Pennsylvania Railroad, 73....Mrs. Elizabeth Taylor Dandridge, a former mistress of the White House, 85....Charles Wilson, a theatrical manager well known in England and the United States, 59.

July 26.—Rev. William R. Huntington, D.D., rector of Grace Church, New York, 70....M. Eugene Rolland, the authority on French folklore, 63.

July 27.—Mayor Leopold Markbreit, of Cincinnati, 67.

July 29.—John R. Tait, artist and critic, 75....Gen. Henry C. Worthington, of Washington, D. C., 81.

July 30.—Henry M. Putney, chairman of the New Hampshire State Board of Railroad Commissioners, 69.

July 31.—Cornelius C. Cuyler, a New York banker, 50....Alfonse Del, well known as a linguist and dialect authority, 72....Dr. George D. Dowkonnt, founder of the International Medical Mission Society, 66.

August 2.—Rev. John George Butler, D.D., founder and pastor of the Luther Place Memorial Church, Washington, D. C., 83....Calvin Wells, the iron manufacturer and former owner of the Philadelphia Press, 82.

August 3.—Solomon Hicks Bethea, United States Judge for the Northern District of Illinois, 56.

August 4.—Christopher Parkinson Brooks, the well-known technical educator, 43.

August 5.—Judge Silas W. Lamoreux, of Wisconsin, United States Land Commissioner under President Cleveland, 66....Mrs. Helen M. Gulliver, formerly principal of Mount Holyoke Seminary, 77.

August 8.—Brig.-Gen. Edwin B. Atwood, U. S. A., retired, 65....Ex-Congressman Milton Candler, of Georgia, 72.

August 9.—President Theodore Harris, of the Louisville National Banking Company, 72.

August 10.—Col. Albert A. Pope, the bicycle and motor manufacturer, 66....Abraham X. Parker, of Potsdam, N. Y., president of the Clarkson Memorial School of Technology, 78....Richard Golden, the actor, 55.

August 11.—Col. John C. Pegram, of Providence, R. I., 67.

August 12.—Rear-Admiral Judah Thomson, U. S. N., retired, 67....Alonzo Webster Church, former Librarian of the United States Senate, 80.

August 13.—Dr. Joseph Allison Scott, of Philadelphia, well known as a cricket player, 44.

August 14.—Dr. Sarah Hackett Stevenson, a well-known woman physician and settlement worker of Chicago, 66.

August 15.—Brig.-Gen. Edwin F. Townsend, U. S. A., retired, 76.

August 16.—Rabbi Samuel Salant, for sixty-four years chief rabbi in Jerusalem, 93.

August 17.—George Picot, secretary of the French Academy of Sciences, 71....Richard Hoffman, dean of New York musicians, 79.

August 18.—Sir Theodore Martin, the English author, 93.

THE CARTOONISTS' POINT OF VIEW.



THE RETURN OF THE DOVE.—From the *Inquirer* (Philadelphia).



THE TEMPTATION OF WILLIAM.

From the *Pioneer Press* (St. Paul).

(Mr. Rehse's cartoon shows Speaker Cannon and Senator Aldrich endeavoring to get President Taft to ride in their heavier-than-Dingley-Bill airship—in other words, trying to win Mr. Taft over to a high tariff bill.)



REVISION.

From the *World* (New York).

Senator Aldrich, having taken away the various articles of the consumer's clothing by means of an increased tariff, removes the duty on hides, leaving the consumer in the ludicrous position pictured above.



THE CONGRESSMAN'S HOMECOMING.

From the *Sun* (Baltimore).

of the New York *Press*, shows us the new Tariff bill, manned by Senator Aldrich, taking its initial flight, with "Mr. Consumer" as the nervous passenger. Should the new Tariff bill achieve as successful a trip as did the Wright flying machine it will be cause for general gratification. A glance at the cartoon at the top of

page 295, however, would seem to indicate that such a result is rather dubious. Here we find the Congressman, just back from his tariff labors at Washington, somewhat puzzled by the cold welcome he is receiving from his constituents, who apparently do not like the sort of tariff he helped to make.



POLITICAL FENCES WILL NEED REPAIRING!

From the *Traveler* (Boston).

YOUNG AMERICA: "Do you want this back, Mr. President?"

From the *Pioneer Press* (St. Paul).



THE DEMOCRATIC DONKEY SICK AGAIN!
From the *American* (New York).

(A number of eminent New York lawyers of Democratic antecedents have called a conference to be held at Saratoga for the purpose of rehabilitating their party.)



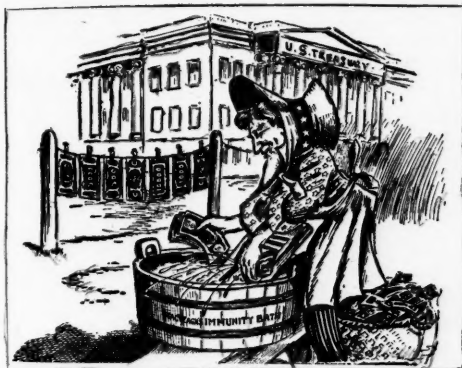
NORTHWESTERN FARMER: "I guess I'll have enough to last you for a while this year."

From the *News-Tribune* (Duluth).



"WHY, I THOUGHT ALL EXPOSITIONS LOST MONEY."

From the *Leader* (Cleveland).



WASH DAY.

From the *Herald* (Washington, D. C.).

(Secretary MacVeagh, of the Treasury Department, proposes to have bank notes and other forms of paper currency washed frequently.)



"DROPPING THE PILOT."

From the *Journal* (Detroit).

The West, as a bucking broncho, throwing his rider, the East, is in accordance with the spirit of Governor Johnson's Seattle speech, in which he urged the West to "throw off the shackles of the East." The cartoon entitled, "Dropping the Pilot," is an appropriate reference to the recent referendum election in Cleveland, as a result of which the people of that city rejected Mayor Johnson's plan for the operation of the street railways.



THE WESTERN DECLARATION OF INDEPENDENCE.

From the *World* (New York).



CLUCK! CLUCK! CLUCK!

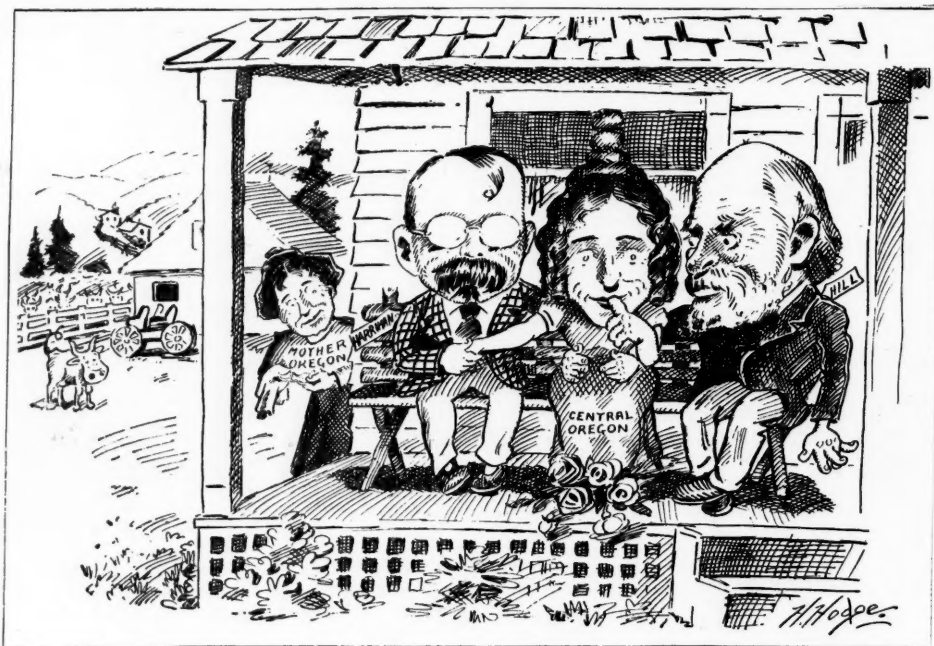
From the *Traveler* (Boston).



GENERAL BINGHAM PAINTING MAYOR M'CLELLAN'S PORTRAIT.

From the *World* (New York).

(Apropos of a recent magazine article on New York's police conditions by General Bingham, in which he included a description of Mayor McClellan.)



MOTHER OREGON: "Do my eyes deceive me? And just when I had given up hope of that daughter ever having a feller!"

From the *Post-Intelligencer* (Seattle).

Considerable interest has been manifested among financiers in Mr. Harriman's return from abroad, where he has been seeking renewed health during the summer, and the people of the

Northwest, as well as railroad investors generally, continue to discuss the rivalry between his roads and Mr. Hill's for the mastery of the Central Oregon territory.



THE PRICE OF IGNORANCE.

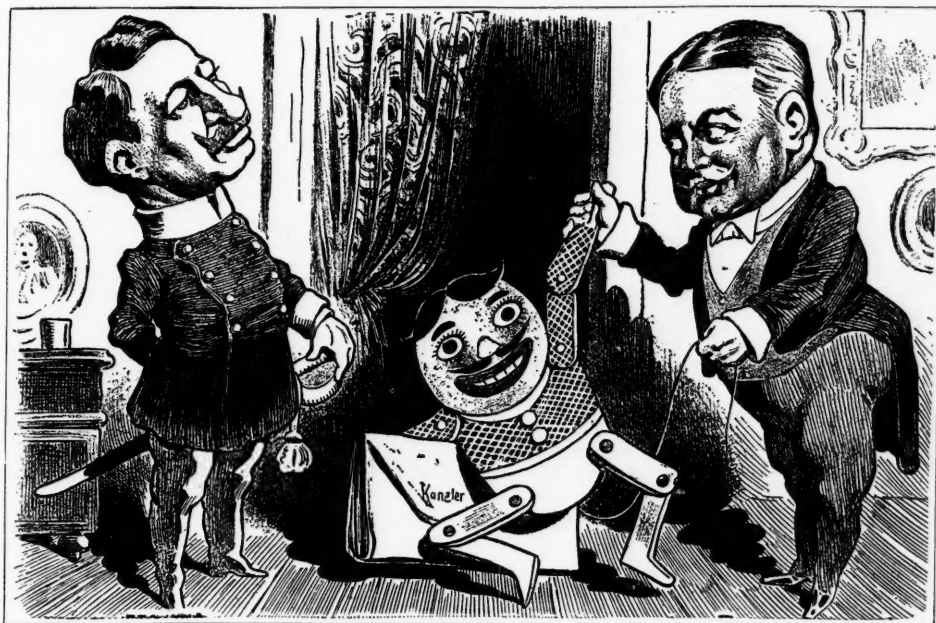
From the *American* (New York).

The controller of the currency recently ascertained by means of circular letters that only about 25 per cent. of bank directors were familiar with the affairs of their institutions.



NEXT!

From the *Traveler* (Boston).



AN AUSTRIAN COMMENT ON THE NEW GERMAN CHANCELLOR.

EX-CHANCELLOR BULOW (to the Kaiser): "Sire, behold the man of my choice for the Chancellorship. He has every quality needed for success."

From Kikeriki (Vienna).



WINGED VICTORY.

London *Punch's* felicitous reference to the famous classical statue, in commenting on the successful flight across the Channel by M. Bleriot in his monoplane.



UNITED SOUTH AFRICA.

From *Punch* (London).

Apropos of the passage to its second reading on July 27 in the British House of Commons of the act creating the United States of South Africa.

THE PRESENT SITUATION IN SPAIN.

BY LUIS GARCIA GUIJARRO.

(Professor in the University of Madrid.)

WHILE the lifeless bodies of the victims of the Turkish revolution are yet hanging on the gibbets and cannon are still smoking in the streets of Teheran, an unexpected event has taken place in the Spanish possessions of the north of Africa and has shaken the whole peninsula,—a percussion-cap, as it were, igniting the rankling hates and the ill-concealed passions of parties and of opinion which Spain, more than any other nation, contains within itself.

Under other circumstances this incident would have passed unnoticed, or at least would have been consigned to oblivion in one way or another, perhaps by demanding hostages from the frontier tribes, perhaps by interminable and fruitless reclamations on the part of the Spanish diplomatic representative at the Sultan's court. But under the present circumstances the murder of four workmen of the railway of the Franco-Spanish mines constitutes the distinct and definitive outbreak of hostilities latent ever since the red and yellow flag has waved in those possessions which are so contemptuously called "the African penitentiary."

Even so, however, the matter as yet deserves to be classified under no more important head than that of *fait du jour*. A civilized nation is purposing to punish severely outrages committed by the ungovernable Moors of Er Rif. We Spaniards have precedents therefor in our own history, most recently the Moroccan outbreak of 1893; and what we desire to do is no more nor less than what France has done on the Muluya in Morocco, the Italians in Somaliland and Eritrea, and the Germans among the Hereros.

NATIONAL PROTEST AGAINST WAR.

Spain, with the intention of punishing severely the unjustifiable uprising, ordered a body of troops to be sent to reinforce the usual contingent of 6000 men constituting the garrison of Melilla; and when the attempt was made to mobilize these battalions an anti-war outburst rent the soul of the nation. First arose the cries of women and

children; then the working-classes joined in those protests, which, at their inception, inasmuch as they were feminine, might have been considered purely sentimental; later on the protests no longer came from women and workmen only, but from the army itself, mutinying and turning its bayonets against its officers; from politicians eager for selfish reasons to avail themselves of this opportunity; from the popular spirit, finally, which, finding the moment propitious for manifesting its constant restlessness, showed itself in riots, strikes, insurrections, conflagrations, in all the excesses of a mob inebriated with wrath and without curb, without any definite purpose whereby its fury might be mitigated.

LESSONS OF 1898.

This sudden appearance of a very serious evil leads us to reflect upon the hidden causes which have silently brought about the present state of affairs. Since the loss of her colonies Spain has been for ten years trying to profit by the terrible lessons of Cavité and Santiago, and partly by means of a natural evolution, partly through the agency of the governmental parties, was beginning to awake to life. The present disturbances afford us an opportunity of making a brief study of the social conditions through which Spain is passing. We shall endeavor, both in our censure and in our praise, not to be influenced by prejudice. Although "to aid in the disheartenment of the mother-country is in truth an impious work," to present her defects "without jeers, or insults, or contempt" * is almost always salutary, for with the clear consciousness of one's sins may come a stimulus to betterment.

THE THREE DANGERS.

Three events of the utmost gravity and importance have just taken place at the same time, damaging still further the already impaired credit of the country and not leaving unscathed its institutions,—the outbreak of

* Menendez y Pelayo; *Historia de los Heterodoxos españoles*; vol. III, page 835.

the Riffian tribes, the death of Don Carlos, and the abortive revolutionary movement of Barcelona. We must not, of course, consider these events as mere accidents without consequences. Whether they were the result of long and studied preparation or due to chance, they took place almost in unison, and their united weight fell upon a mass of people very ready, after so many disasters, to seek safety wherever it might be found.

THE OUTBREAK OF THE TRIBES AND THE MOBILIZATION OF THE TROOPS.

There has been much talk of our rights and obligations in Morocco. Our proximity to the Mograbin Empire, our acquaintance with the usages and customs of its people, and the fact that we have possessed that "penitentiary" for a long time have consecrated our claims in international law. This the powers admitted in the act of Algeciras; and without taking into account the hackneyed "testament of Isabel la Católica," the fact is that no other nation could present better rights to intervene in the Moroccan anarchy. Indeed, had our situation been different we alone ought to have had the principal rôle; but impoverished and unsettled by several years of crises, we necessarily had to associate ourselves with the French and to accept the rôle of figurant, allowing the neighboring republic that of protagonist.

However, this secondary rôle assigned us by the protocol may be considered, after all, a diplomatic triumph. Our work consisted merely in sending advisers for the internal management of the Empire. The French, on the contrary, had to organize battalion after battalion, which, though annihilating with their powerful resources of war the Moroccan hordes, could not avoid reverses which almost turned triumph into defeat. Since then the Sultan who signed the act of Algeciras has been dethroned. The intrigue which brought him to ruin was due to his too great affection for European policies; therefore he who took his place was uncompromising in his non-compliance with the international agreement, in his absolute hostility to the Christians, in his independence of the European tutelage which was so antagonistic to the sovereignty of the empire and to the precepts of the Koran. And naturally when the international promises were broken Spain found herself forced to intervene.

The present cabinet, headed by Don Antonio Maura, which, if it sins in anything

concerning our international policy, sins in being too prudent and moderate, and in having on different occasions avoided sending armed forces to co-operate with the French, tried anew to proceed *à l'amiable*, and sent our representative in Morocco, Sr. A. Merry del Val, to arrange for discussing with the Sultan certain measures relating to our African possessions. The Arabs have been and are at present masters of diplomacy; in lieu of ministerial subtleties and sophistries they possess the forbearance to listen to whatever is asked of them, then they whine and moan, and in the end do not obey. Without doubt, therefore, Sr. Merry del Val ended his interview somewhat out of patience, for he obtained no decisive answers, the negotiations remaining in suspense until they should be terminated by the Moroccan embassy which Muley Hafid proposed to send to his Majesty the King of Spain. And it was while the ambassadors of the Sultan were being received with grotesque solemnities that there took place the infamous attack of the Riffians upon the workmen of the railway of the Spanish mines situated near Melilla.

The quick intervention of General Marinas gave condign punishment to the frontier tribes, but it was straightway seen that this had been only a spark thrown off by the fire and that the entire region of the Guelaia (that is, the tribes of Benisicar, Beni-Sidel, Beni-Bugafor, Mazuza, Beni-fu-Ifrur) was ready for hostilities. Therefore, in order to subdue the turbulent tribes, General Marinas asked the government for a reinforcement of 40,000 men.

In these days the safety of nations is entrusted to bayonets. But this very guaranty of peace is liable to be converted into a mighty calamity. The army "is the fatherland in its youthful and vigorous aspect. Whatever the fatherland, conceived as a number of individuals, has or may have of ineptitude, of turbulence, of superstition, or of blasphemy disappears under the iron pressure of discipline, which of so many insignificant pieces makes one prodigious whole."* But Spain, as a result of an infinite series of factors, has lived and still lives under a régime entirely too military.

A long list of insurrections, revolts, and civil wars has created the "camarilla spirit" (the word *camarilla* signifies a coterie of influential persons managing the government)

* *Doña Perfecta*; by B. Pérez Galdós; chapter *La Tropa*.

and produced a multitude of high officials such as exists in no other country. Besides, our unfortunate campaigns teach that favoritism has ruled to the extent of subordinating the most splendid examples of bravery and heroism to considerations of friendship or of relationship. The commanders-in-chief have had absolute authority in matters of promotion, and "not only did generals reward friends who were amusing themselves in Havana and Manila while others were fighting but also some who had not left Madrid."* Some chiefs made larger fortunes during the campaigns, while others were sacrificing themselves for the fatherland without being able to validate claims to their own property. All this being so, discipline necessarily relaxed, and the army, which should be "glory and honor," could not but become merely "a collection of soldiers, an insufferable calamity."[†]

The popular imagination collected all these reports, which were rife now in the form of murmurs, now as clear and precise accusations, and compared the conclusions drawn from them with those drawn from the fate of the soldiers, who, having marched away in strength and health one or two years before, were now returning exhausted, nothing but specters, skeletons supported by sheer spirit. Like living warnings they were arriving by thousands in Barcelona, Santander, Valencia, Coruña, and the ports of the south. The people saw them, heard their stories of resignation and suffering, and forgot straightway the deeds of arms in which their officers or chiefs had figured as heroes. Merely their "while we were eating hard bread they were drinking champagne" was enough to convince the people that even in the army, although it seemed a great family, there existed those two irreconcilable enemies,—the well-to-do and the proletariat; the rich man who exploits others and the poor man who patiently offers his services.

MILITARISM AND THE THRONE.

Most of the officers lamented this state of affairs, which was estranging the nation from them, but they could not better matters. Everything was the inevitable result of a policy of selfishness and sordidness. As the chasm between the military class and the people grew wider and wider, the former drew closer to the throne, replacing the pure

ideal of the fatherland by dynastic considerations. From that moment we fell into militarism. The throne, indeed, after sounding public opinion, saw that it was far from firmly planted in the country, not even the countless employees which filled the Spanish administrative bureaus being attached to it. Thereupon ensued a series of favors to the armed class, inexplicable unless they were in payment of a tacit alliance, such as new credits, pensions, increase of officers' salaries, and so forth, which presented a palpable contrast with other branches of the public administration.

This policy could not but lead, sooner or later, to mutiny than which nothing could be more serious in an armed body; and this inevitable result has now come to pass, inasmuch as the troops have refused to follow their officers, and have even opposed them with bayonets. The officers on the other hand, wounded in their honor and conscious of the disaffection of the nation, have become anxious to vindicate themselves by acts of valor which are rather acts of temerity. They have uselessly exposed their lives to the fire of the Riffians and have been the victims in a great number of the casualties which have occurred.

THE DEATH OF DON CARLOS AND THE SUCCESSION OF DON JAIME.

At the same time that the government was arranging to mobilize the reserves in order to send the desired reinforcements to Melilla there arrived the official news of the death of the Duke of Madrid, Don Carlos de Borbón. This aggravated the troubled state of affairs. Don Carlos was succeeded by his son, Don Jaime, a man full of the energy of youth and accustomed to war. Would he try to make valid his claims by an insurrection as his predecessors had done? Has Spain changed to the extent of rendering such an attempt impossible?

Whoever desires to study Carlism will find a great contrast between appearances and reality. It is useless to study the results of elections. In Spain it has become customary for parties to alternate in power; a Conservative majority is succeeded by a Liberal majority, and *vice versa*, without the changes affecting in any sense the national consciousness. The Carlist party, although it is represented in the national legislative body by only fifteen or twenty members, is really an undeniable force, which is to be feared in circumstances like the present.

* Urquía; letter published in *El Nacional*, of Madrid.

[†] See *Los desastres y la regeneración de España*; Rodríguez Martínez.—Pérez Galdós.

The Carlists, like the Republicans, are recruited from the lower classes, the former from the agricultural, the latter from the manufacturing class; and although the two parties manifest diametrically opposed tendencies, they agree in hatred of the actual régime.

To contend that all this popular mass has not developed in a more liberal direction, and that it desires the same political program as in 1873, would be absurd. But who knows whether Don Jaime, thoroughly modern in character and tendencies, will adopt a position in accord with all the aspirations of his party? In this connection, however, it must not be forgotten that before the death of his father the Carlist party considered him to be a solution of the question of Carlism and that the "Jaimistas" constituted a majority of the younger Carlists of Spain.

As to organization, in spite of the assurances of the government that the Carlist party is deceased, it is certain that it is in a better condition than any other party; it possesses more than forty newspapers throughout Spain; its clubs are established in almost all cities, strangely enough, even in those where Republicans are in the majority (for instance, in Barcelona, Valencia, and Zaragoza), and these clubs implicitly obey the voices of their sectional chiefs. If this is so in times of peace, is it unreasonable to consider as a serious danger the possibility that all these adherents of Don Jaime may now try to validate their claims by arms? A characteristic note of the Carlism of today is its "secularization"; that is to say, it is not so decidedly protected by the Church as in 1873. The present dynasty has not been averse to granting benefices and miters, so that as a rule only the lower orders of the clergy support the Carlist tradition.

All in all, the death of Don Carlos may be considered as a sign of life for Carlism. He seemed in these latter years to have abandoned the idea of laying claim to the crown, and lived quietly in Venice. With the youthfulness of Don Jaime the party is rejuvenated; and an uprising in which he might count upon thousands of adherents would not be difficult in the present circumstances.

THE REPUBLICAN PARTY.

Side by side with this danger is the Republican agitation. If the nature of the Spanish Republican party be carefully

studied it will be seen that its triumph is very improbable, and that this is due to the lack of harmony among its adherents. Most of the important cities are Republican: Madrid, Barcelona, Cadiz, Zaragoza, Castellón de la Plana, Valencia, Sevilla, and so forth, have Republican representatives in the national legislative body. This being so, why does Republicanism not constitute a serious menace to the stability of the government? Because, as we have already said, the differences between the various shades of the party are so marked that certain of its members are considered as political enemies by their colleagues, rather than a party standing for law and order.

Furthermore, Republicanism in Spain seems to be a collection of ideas for nourishing the license of the masses, and therefore the Republicans cannot but fall, sooner or later, into socialism and anarchy. Educated in this manner, the masses of the people close their eyes to whatever does not satisfy their desires, and so not seldom their hatred is incurred by those who, a little while before, were the arbiters of their wills. Blasco Ibañez, Salmerón, Azcárate, Morote have frequently been the victims of this inconstancy. In their desire for law and order they dared to acknowledge the justice of certain acts of the government, and from that moment they were reproached with lack of Republicanism. For the people to be Republican means to be hostile "*à outrance*" to the government, to the Church, and to property rights; naturally those who hold these opinions have had to separate little by little from those who believe in law and order, whence came the division of the party into "governmentals" and "radicals." The latter recruited their forces from the great manufacturing centers; Coruña, the mining basin of Vizcaya; Barcelona, and Valencia contributed an uncultured mass imbued with anarchistic theories and capable of the worst excesses. Leaders of these movements were, in Valencia, Rodrigo Soriano and Azziati*; in Barcelona, Alejandro Lerroux.

THE CATALAN TERRORISM AND THE SCHOOLS OF ANARCHY.

In the latter city the Republican party has assumed an especial character because of the spread of anarchistic ideas. Barcelona, the richest city of Spain, possesses a large

* Incredible as it may seem, the masses sent to the Parliament Felix Azziati, an Italian citizen, who had to be naturalized *a posteriori*.

population, essentially industrial and commercial. The feverish bustle of its streets and inhabitants gives it a European character distinct from the placidity and calm of other Spanish cities. In Barcelona every one works with uncommon zeal; merchants, bankers, simple workmen contribute all their energies to this incessant pulsation of life and activity. But with this "Europeanization" Barcelona has acquired most harmful ideas, which have worked upon the imagination of the laboring masses to the extent of bringing them to terrorism. These classes have their centers of instruction, in which they are taught nothing but antagonism to all the bases of the social edifice; they have their newspapers and ultraradical reviews; and they read with the utmost relish translations of all the anarchistic literature of Russia, France, and Italy, making of these baneful doctrines the catechism of their lives.* Face to face with these elements of destruction is the class of selfish and utilitarian employers, whose conduct in regard to the workmen is not very likely to re-establish social peace.

A socialist review entitled *La Ciencia Social* described in 1895 the social conditions of Barcelona in such correct terms that we cannot do better than translate the passage. It shows the causes of the events which have just taken place in the capital of Catalonia.

Gold is king; private speculation bases its calculations upon the general woe. Everywhere we see each class interested in the misfortune of the other classes; and individual interests opposed to collective interests; the lawyer desires the disruption of families and a plenitude of lawsuits; the doctor desires for his fellow-citizens fevers, wounds, and maladies of every kind; the soldier desires a war which may kill half the army so that he may become a general; the priest hopes that the dead may abound,—the "good" dead, those who leave fat legacies and order luxurious interments. . . . In everything and everywhere rivalry and competition are sources of defamation. . . . We call ourselves equals before a law which protects the rich man and abandons the poor man to the extent of making the latter the necessary enemy of the former; for the triumph of goodwill is not possible in a society in which, out of every twenty persons, nineteen possess a right to the common burial-ground.

If all this is so,—if the rich man takes no account of the lot of the poor man; if the latter sees in his employer his eternal oppressor,—there must of necessity be a stifled

and latent war, which will break out in uncurbed disturbances at the first opportunity. This opportunity presented itself when the city became defenseless because of the necessity of sending the regiments of its garrison to Melilla. If the movement had been well organized it would have been able to resist the government, for the Republicans possess sufficient numbers. But no one can manage fanatic masses, and the chimerical attempt failed. Its failure, however, cannot blind us to the deep-seated causes of our social evils, which in Catalonia possess a peculiar character. With the rebirth of sectionalism in Catalonia has awakened a certain hatred for the central section of the country, which the Catalans consider to be of absolutist tendencies and to be the cause of all misfortunes which may befall the provinces. This movement has been worked up little by little by all methods of social influence; the press, literature,† even the fine arts present in Catalonia a peculiar aspect not to be found in other parts of Spain, and which has given the attempted revolution a sectional character.

The doctrines diffused among the masses have an essentially anti-clerical tinge. Therefore, when the riots broke out in the streets, the first attack of the mob was directed against the religious orders. Immediately after their expulsion from France the monks came in great numbers to settle throughout Catalonia; moreover, they not only possess novitiates, but also, inasmuch as they endeavor to procure resources by teaching, have built schools in the richest cities of Catalonia. Their splendid buildings and the stories which circulate among the people about the immense riches of the friars make them the target of any and all attacks, so that they were the first victims of the riots.

The government, although it has stifled the insurrectional movement, must not forget that these events indicate causes which lie deeper and which are not to be cured by gunshots but by a careful study of the needs of the people. Only thus will end the ever-present divorce between the governing and the governed; only thus will the people, having learned to trust those who direct their destinies, attain to days of prosperity and happiness.

* To the "Escuela Moderna" belonged Professor Morral; from its doors he went out to throw the bomb in the path of the sovereigns in May, 1906.

† Guimerà, a well-known Catalan dramatist, has made a splendid study of the social customs of Catalonia in "Terra Baixa." This book has been called one of the emblems of the sectionalist cause.

HAWAIIAN PROBLEMS OF TO-DAY.

BY FORBES LINDSAY.

(Author of "America's Insular Possessions.")

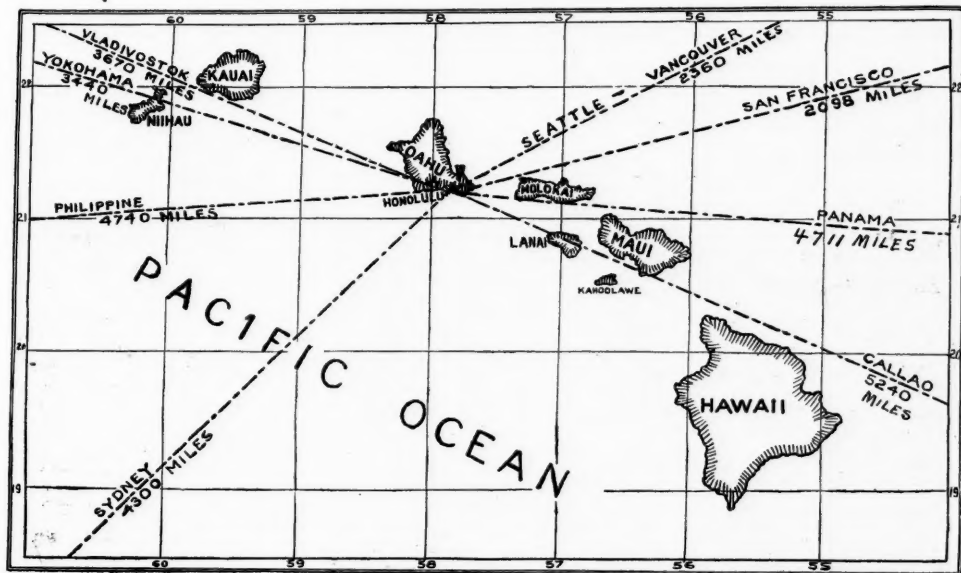
HAWAII knocked insistently at our door for many years before the exigencies of war induced us to open it with sudden alacrity. More than a decade has elapsed since the Territory was admitted to our federation of commonwealths, and yet our people in general know little about the internal affairs of Hawaii and have no adequate idea of its value. The present labor difficulties will serve at least one good end by attracting attention to this outlying section of our country.

The Hawaiian archipelago lies in the direct route from our western ports to the Philippines, Australia, and the continent of Asia. A straight line drawn from Cape San Lucas, the southernmost point of the United States, to Manila, its most distant possession, would pass through the island of Hawaii. Honolulu is the only possible coaling and supply depot for vessels journeying between Japan and America.

The value of the group of islands as a

military base was strikingly illustrated during our war with Spain, and authorities have frequently declared that Pearl Harbor is capable of conversion into the finest naval station in the world. To the geographical position which creates these commercial and strategical advantages the Territory adds such superior conditions of climate and soil as to insure its perpetual prosperity, provided political and labor complications do not act as a brake to its progress.

In the matter of area the Hawaiian group is one-sixth larger than Porto Rico, but the population of the latter island is seven times as great as that of the Territory. At the time of his discovery of the islands Captain Cook estimated the number of their inhabitants at 400,000. Since then they have decreased rapidly, owing to the introduction by the whites of epidemic diseases, such as small-pox and measles, until in 1875 the population had fallen below 60,000. Although immigration produced a reaction, the decline



MAP OF THE HAWAIIAN ISLANDS.

(There are a few minor islands, mostly uninhabited.)

among the natives continued with a gradually decreasing rate of progression. To-day the aboriginal element remains practically stationary, if allowance is made for the detachments occasioned by marriages with foreign races.

ASIATIC ELEMENTS IN THE POPULATION.

The first trade relations of Hawaii were with China, to which country it made large shipments of sandalwood. Early in the nineteenth century Chinese began to settle in the islands, and to one of these newcomers is said to be due the credit of first having manufactured sugar from cane grown in Hawaii. The cultivation and reduction of sugar cane became an industry of importance about the middle of the last century and took the place of the whale trade, which began to decline at that period. It was soon apparent that dependence could not be had upon native labor, and the government entered into a treaty with Japan guaranteeing a bonus on every Japanese man or woman imported. The planters paid from \$12 to \$15 a month to each laborer and furnished comfortable quarters, fuel, water, and medical attendance free. At the end of his contract term of three years he was at liberty to return to his native land.

Under these conditions the influx of Japanese became so great that an effort was made

to check it and to encourage instead immigration from China. The movement had been in operation but a few years when it was brought to an abrupt close by the annexation of Hawaii and its subjection to the Chinese Exclusion law of the United States. In the meanwhile efforts had been made to secure labor from various parts of the world, including Germany, Norway, Sweden, Portugal, Spain, Italy, the Azores, Madeira, and Porto Rico, besides which Americans, British, and negroes from the United States had come in small numbers. In the fifteen years preceding annexation the government of Hawaii expended \$1,500,000 and the planters' association an equal amount in the promotion of immigration, but with the amenability of the Territory to the laws of the United States prohibiting contract labor the movement necessarily ceased.

As a result of these measures to supply the demand for labor we have in Hawaii the most extraordinary composition of population to be found within our borders. More than half the people of the islands are Asiatics, professing some Oriental religion, and less than 5 per cent. of them are native Americans.

The school census of 1908 gives the population of the Territory as 200,000, while in the report of Governor Frear for the same year it is estimated at 170,000. Probably an



FIELDS OF TARO BACK OF HONOLULU, THE FAVORITE FOOD OF THE KANAKAS.

average would be very near to the exact figures, and the following statement is derived from reliable sources:

Chinese	20,000
Japanese	75,000
Koreans	5,000
Oriental s	100,000
Portuguese	27,000
Spanish	3,000
Porto Ricans	2,500
White foreigners	32,500
Hawaiians, including half-breeds	37,000
Americans, British, Germans, etc.	12,000
Various Pacific Islanders	2,000
Total	183,500

In explanation of the foregoing division it must be stated that it has long been the custom in the islands to classify the population according to descent. Thus the third generation of an English family remain British in popular conception. Of course, all the natives and a large number of the Asiatics are American citizens.

Although immigration from Oriental countries has practically ceased, the number of Asiatics is increasing by natural process at a rate greater than that experienced by any other race, except the Portuguese. Part Hawaiians are ever becoming more numerous. They spring, as a rule, from unions of native women with whites and with Chinamen. The Portuguese and Japanese seldom marry outside of their own race. The results of these mixed marriages are generally good from the physical point of view. In the course of time part Hawaiians will outnumber full bloods and the latter will ultimately disappear. Small additions are made annually to the ranks of the native-born Ameri-

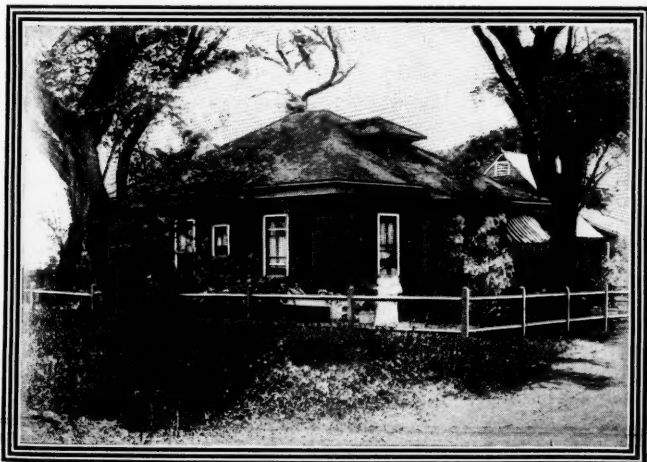


A NATIVE SPONGE-GATHERER.

cans, but the increase in their numbers is not considerable. Under present conditions Hawaii is not a promising field for any class of our countrymen. Individual capitalists, professional men, mechanics, and farmers do find good openings, but they are the exceptions rather than the rule. However, the resources of the country are by no means fully developed and, with economic changes that are in prospect, the Territory should become one of the most attractive places to the homeseeker.

THE SUGAR PRODUCT.

Hawaii is in the somewhat precarious situation of having all her eggs in one basket. The sugar industry is practically the sole dependence of the islands. The entire population is interested in it. Those who are not



A TYPICAL HOME IN THE ISLANDS.

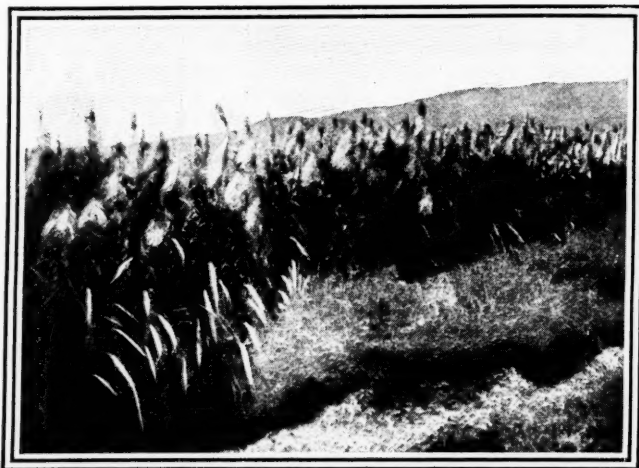
actually engaged in the business have money invested in it or derive their livelihood from sources that are contingent upon it. The most common form of speculation among the islanders consists in buying and selling the stocks of the various sugar companies. One-fourth of the population is actually employed on the plantations and several thousands more in closely allied industries. Good times and hard are measured by the rise and fall in the price of sugar. The aggregate capital employed in the industry amounts to \$150,000,000. The value of the exports from the Territory during last year was \$42,000,000, of which 95 per cent. represented sugar.

Of late years the cost of labor has risen, coincident with a drop in the price of the product, and the business is at present in a far from prosperous condition. It would, in fact, have been ruined ere this but for the enterprise of the planters, who have constantly offset adverse developments by improved methods of manufacture and more intense cultivation. Whereas twenty years ago the average yield of commercial sugar was about 10 per cent. of the weight of cane

consumed and the average yield of cane was 25 tons to the acre, at the present time 100 pounds of cane are made to give 12 pounds of sugar and the average yield of the acre is 40 tons. But in the consideration of these figures it must be understood that the Hawaiian crop takes an average time of twenty months to mature.

HANDICAPS OF THE CANE-GROWER.

Sugar cane cannot be raised in Hawaii on capital less than \$100 per acre, and some plantations are capitalized at six times that amount. Each of the islands is divided into two distinct climatic zones. On the eastern, or windward, side of each the rainfall is copious. On the leeward side it is not sufficient for intensive agriculture. The best sugar lands are on the arid sides of the islands, where the application of water by artificial means is necessary to successful cultivation. There are few surface streams available for the purpose, as the broken and porous character of the lava beds which cover the islands tends to underground flow. Therefore, the greater part of the water used is secured by expensive processes, such as tunneling, fluming, and



HAWAIIAN SUGAR CANE IN BLOOM.



RAILROAD ON THE EWA SUGAR PLANTATION.

pumping. The average cost of irrigation is \$140 per acre, as compared with about \$35 in our Western States. Another heavy expense is incurred in fertilizing, which averages \$4.65 per ton of sugar produced or \$22.20 per acre under cultivation.

The industry labors under the burden of heavy transportation charges. The United States laws require that the output shall be shipped solely in American bottoms. The planters have never been able to secure sufficient tonnage to carry their entire export round Cape Horn, and at least one-fourth of the crop must be sent to our Eastern markets by way of San Francisco and a transcontinental railroad line.

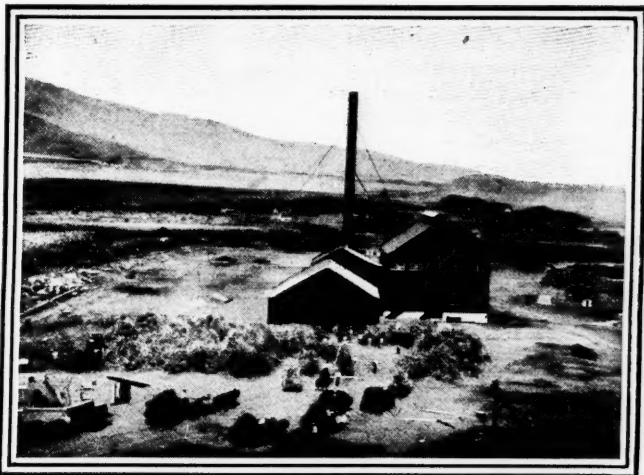
THE LABOR SUPPLY.

The proportion of labor in the total cost of producing Hawaiian sugar is 60 per cent., and any considerable increase in that direction would destroy the profit in the business. Low wages are more than ever essential to the preservation of the industry, and the cane fields must be worked by aliens if they are to be kept in cultivation at all. The indigenous population is not equal to the demand and, as a matter of fact, does not meet

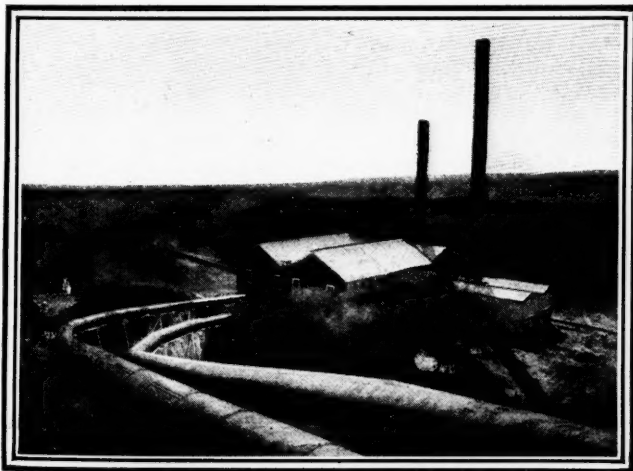
it in any appreciable degree. The Kanaka has a distaste for agricultural pursuits and, despite his robust appearance, is seldom equal to the work of the cane fields. The Chinese, who would be most acceptable to the planters, may not be brought into the country. There is no desire to increase the numbers of the Japanese. The Portuguese, who have proved to be on the whole the most satisfactory of all laborers tested, are deterred by the expense of the journey from going to the islands on their own initiative.

Under these circumstances the supply of labor has been cut off and the sugar industry is already beginning to suffer for lack of it.

This condition has been accelerated by the desertions from the cane fields. Comparatively few Portuguese are now employed on the plantations. With their habits of thrift and their customary practice of making every member of the family work, most of them have saved enough to buy a little land and set up on their own account as farmers. In the same way the Chinese have mostly abandoned the service of the planters for fields of independent effort and are engaged in a variety of occupations. Many have become mechanics and shop-



SUGAR MILL, WAILUKU.
(Part of the Spreckels estate.)



ONE OF THE EWA PLANTATION PUMPING STATIONS.

keepers, but the majority are to be found cultivating rice and taro on leased lands. Thus the Japanese have virtually a monopoly of the labor supply of the staple industry of the country.

The Japanese have long been alive to the advantage of their position and have systematically worked to strengthen it by organization, periodical strikes, discouragement of laborers of other nationalities, and various other means. In marked contrast to the Chinese, they have always been unruly and aggressive. In former strikes they have created riots and would on more than one occasion have resorted to extreme violence but for the intervention of their consul with threats of deportation and severe punishment. A few years ago they sent four or five of their number to the United States for the purpose of studying the methods of labor unions. These men, who are now their leaders, have adopted a shrewd policy. They discountenance extreme measures, such as complete and prolonged strikes, which would be apt to kill the bird that lays the golden eggs, but advocate striking at frequent intervals and critical periods, by which means they hope

to gain by degrees the utmost concessions that the business can be made to afford.

The Territorial government recently devised a plan that will, it is hoped, create for the planters an avenue of escape from the threatened domination of the Japanese field hands. Whilst the federal statute on the subject prohibits the States from creating special funds or accepting contributions for the purpose of promoting immigration, it is believed that the proceeds of general taxation may be applied to the object without violation of the law. Acting on this idea a general income tax has been levied and, with the means thus placed at his command, Mr. A. J. Campbell, Treasurer of Hawaii, is now in southern Europe recruiting laborers. It is designed first to supply the existing deficiency, then to overcome the preponderance of Japanese, and ultimately to gradually supplant them with whites. The consummation, if ever attained, must be the work of many years.

HAWAIIAN CITIZENSHIP.

With all its gravity, the labor situation is not fraught with such great menace as the political outlook. At the present time there



ROAD THROUGH A BANANA AND COFFEE PLANTATION.



A WAGON ROAD, SHOWING THE CHARACTER OF THE ROADS OVER WHICH THE HOME-STEADER CAN BRING HIS PRODUCE TO MARKET.

are fewer than 14,000 voters in the Territory. Of this number 9000 are Hawaiians, or half-breeds, and 2000 native Americans. Only a few hundred are Asiatics. But the composition of the voting population of Hawaii will be greatly changed as the younger generation reaches manhood. In the citizenship of the future, say fifteen years hence, as indicated by the nationalities of the children, Orientals will occupy an important place.

Of the 25,000 children attending the public schools of the Territory 24 per cent. are Japanese; 11 per cent. are Chinese; 35 per cent. Hawaiian and half-breeds; 19 per cent. Portuguese, and less than 5 per cent. native Americans. In the Oriental, Portuguese, and native classes the increase is at the rate of more than 15 per cent.; in the American and Teutonic classes at little more than 1 per cent. The laws of the Territory require all children between the ages of six and fifteen years to attend some school. In this connection it is interesting to note that Hawaii was years ago confronted with the problem which has lately exercised the school authorities of California. It was solved by rigidly excluding Asiatics of sixteen years and over from

the grade schools. On the other hand, every effort is made to secure the regular attendance of the children of Oriental races who are probable future voters and to educate them to American ideas and principles.

The organic law of the Territory confers practically universal suffrage, there being no restriction on even the lepers of the Molokai settlement. Ability to understand English is not necessary in order to qualify as a voter, although that is the only language taught in the public schools, and compulsory education has been in force throughout the country since 1850. All male children, therefore, born in the Territory since June 14, 1900, will be entitled to vote upon coming of age.

The change in the proportionate strength among the different classes of voters will leave the Hawaiians in their present position of numerical preponderance, but it will bring the Orientals into almost equal standing. The natives have little initiative or independence in their make-up. Politically they will be plastic material and are almost as likely to be influenced by the Asiatics as by the whites. The Chinese bid fair to make intelligent and useful citizens. Many of this



BANANAS AS GROWN IN THE BACKYARDS OF THE HOMES AND RAISED ON SMALL PLANTATIONS.

race are well-to-do, have adopted our customs and manner of living, and are bringing their children up to become Americans in every sense of the word. School-teachers throughout the islands agree that the Chinese children and those of Chinese-Hawaiian parentage are the brightest and most promising in their charge. Business men find Chinese youths the best available for filling positions demanding exceptional honesty and intelligence. The Portuguese are equally likely to develop into desirable citizens and intelligent voters. The menace of the future lies in the prospective political power of the Japanese.

HOW MAY HAWAII BE AMERICANIZED?

The undesirable conditions of population, political prospect, and labor in Hawaii have

led the federal Government to the consideration of measures for the Americanization of the Territory. The most effective, if not the only feasible means available would seem to be the reclamation of certain portions of the extremely rich lands of the islands and their conversion into homesteads which farmers from the mainland may settle upon. It is estimated that 100,000 acres, now practically useless, can by irrigation be rendered highly productive. This would furnish 5000 farms having an average size of 20 acres. Such a holding, under the conditions of soil and climate prevailing in Hawaii, would suffice to support a family in comfort. The occupancy of the entire area, when so subdivided, would create an addition of 20,000 to the population, including 5000 property-owning voters. If the project is carried to success there will be no difficulty about finding fertile public land for the extension of the movement.

It must be admitted that every effort in the past to establish agricultural settlements of Americans has failed, but the experiment has never been made on the basis of actual ownership and home-making. The causes that operated against former ventures of this description can be minimized in the government enterprise or entirely eliminated from it. American pioneers of the kind who are developing the arid regions of the West with such marvelous rapidity would find an attractive field in Hawaii. The natural conditions are distinctly favorable to the success of the small cultivator. A variety of agricultural products can be raised for which profitable markets are open. Among the advantages are a fine climate, excellent educational facilities, and a government which is disposed to further the interests of settlers in every possible manner. The difficulties to be encountered are those experienced by every new community and not unlike those constantly met and overcome by the homesteaders on the reclamation projects of our Western States.





ONIONS ON DRAINED MUCK LAND, NEW YORK.

(Grass and grain soil in the background.)

MAKING BETTER USE OF OUR SOILS.

BY HUGH HAMMOND BENNETT.

(United States Department of Agriculture.)

WILL the soils fail to produce food and clothing for our rapidly increasing population? Have we been so extravagantly wasteful in the use of our soils? Has not the real development of our lands just begun? Have we not just turned the virgin soil? Let us take an account of stock,—look into the possibilities of our greatest national asset, the soil, which for all time to come is to be the basis of human welfare. If our fields are being abused to the point of exhaustion, let us remove the cause; if the yields are too low, let us seek the remedy, for we all concede it to be the moral obligation of a progressive nation to guard carefully all those sources of man's welfare as the rightful heritage of posterity. Any thought of the future of the nation suggests the absolute necessity not simply of conserving the soil, but of increasing its power to produce beyond past and present averages.

From the standpoint of the most reliable and recent investigations and information, our land, handled in accordance with certain natural laws that determine its proper utilization, will not only furnish food and clothing for an immensely greater population for ages, but will supply fuel and light and power when coal and petroleum shall have been exhausted. But we must look to better methods of soil usage, for the alternative

of bringing under cultivation unused and abandoned lands and lands reclaimable from arid or swampy conditions, although adding a vast total to our cultivable fields, will not always suffice to meet the growing demand. Already many sections of congested population are calling upon outside sources for food and many of the large cities at times actually suffer from vegetable famine. Such shortages are due to more or less local and abnormal conditions, but might become general and permanent unless wise foresight should make provision for the feeding of our rapidly increasing population.

The producing possibility of our cultivable lands becomes almost inconceivable to the mind when we consider that only a small proportion of the land nominally in farms is actually under cultivation and that our acreage yields are ridiculously low in comparison with those of highly developed agricultural countries like Germany, France, and England, notwithstanding that our soils are naturally as productive.

At the average rate of twenty bushels of wheat per acre (which is much less than the average yield of either Germany or England), the State of Illinois, with a few Indiana counties thrown in for good measure, cultivated exclusively to wheat would produce annually more of this product than does the en-

tire country. If Ohio and Iowa's 76,784 square miles of improved land (Census, 1900), with a 17,658-square-mile-strip of Kansas, should be planted in corn, there would be harvested, with an acreage yield of fifty bushels, 3,022,144,000 bushels, an amount practically equal to the total 1906 corn crop of the United States, Canada, and Mexico.

With the 10,615,644 acres of Georgia's improved land producing a bale of cotton per acre, the yield would amount to nearly as much as the total annual cotton crop of the country; and yet a large part of the 15,776,413 acres of so-called "unimproved farm land" in Georgia can be made to produce as well as the best land in the State, with still a balance of 11,191,943 acres of unclassified land, of which a portion only is irreclaimable to agriculture.

MUCH LAND TEMPORARILY BUT NOT PERMANENTLY IMPAIRED.

The total acreage of the United States in farms as given by the Twelfth Census was 838,591,774 acres, of which 49.4 per cent. was classed as improved farm land. The large proportion of "unimproved farm land," including that not under the plow, simply affords a partial measure of the vast field for agricultural development, for it by no means stands for that much waste land, since the greater part is arable and needs only intelligent treatment to be made first-class farm land. Aside from the large total of unused arable and reclaimable lands included in the 1,064,869,986 acres of the unclassified portion of continental United States, exclusive of Alaska, the rehabilitation of a very large area of the so-called "worn-out lands" of the country rests simply in the application of modern ideas of soil management.

It is true that a considerable total area has been ruined temporarily or seriously injured for strictly agricultural purposes by erosion, as the result of deforestation, steep-hillside cultivation, or failure to provide against surface wash; but it is difficult, if not impossible, to find, purely as the result of cropping, any soil so thoroughly worn out that the word "exhausted," in its literal sense, may be applied to it, and the term has no place in the language of the up-to-date farmer. There is much land that has deteriorated under abuse to a point where further cultivation in accordance with past methods is unprofitable; some fields are in a

bad state of repair, but few are in an irremediable condition. The hardest used soils of eastern and middle Virginia, even those of the old "glebe farms" which have been under cultivation almost continuously for more than two hundred years, are susceptible of rapid improvement under good methods of treatment wherever the hand of the hustling farmer strikes.

That the old-style methods have impaired the producing power of much land by reducing it to a condition unfavorable to healthy plant development, without necessarily having caused material change of the inherent fertility, is shown by the increased yields secured immediately by better cultivation without addition of fertilizers. It has been conclusively demonstrated that the acreage yields of wheat on the highly productive prairie soils of southern Minnesota, which in some instances have been reduced to a point of unprofitableness by continuous wheat-growing, can be increased materially simply by growing a crop of corn; and that the yield can be further increased by a rotation including wheat, corn, and clover. To express it differently, the so-called "wheated out land" simply needs a change: it may be the correction of an unsanitary condition, brought about by more thorough cultivation to aerate the soil; it may be the destruction of noxious weeds by inter-tillage cultivation; it may be the replenishment of healthful organic matter by growing clover; or it may be the combined effect of all these together with other results secured by a change of crops; anyhow, the old way of growing wheat continuously will not answer.

METHODS OF FARMING IMPROVING.

Notwithstanding the fact that agriculture has declined in some sections and farms have been abandoned in others, when the country is considered as a whole the methods of farming are seen to be gradually and persistently improving. "In 1890 the 8,565,000 people engaged in agriculture in this country produced a total of \$2,466,000,000, or an average of \$287 per capita. In 1907 the 11,991,000 engaged in agriculture produced a total of \$7,412,000,000, or an average of \$618 per capita. During that period the number of people engaged in agriculture increased by 40 per cent., while the value of farm products increased by 200 per cent., and the value of all farm property increased by 89 per cent." This increase in the value of farm products, so disproportionate both to in-

crease in the number of individuals engaged in agriculture and to higher prices received for agricultural products, bears convincing testimony to an improvement in farm methods.

The boll weevil scourge scattered consternation among Texas cotton planters, and many sold their farms at ridiculous prices to seek new homes; but the more resolute, encouraged by the National and State Departments of Agriculture, remained and fought out the battle. The pest proved to be a blessing in disguise,—the means of urging the farmers to find out that their lands were suited to other crops than cotton and corn and that their methods needed improvement.

THE PROBLEM OF SOIL ADAPTATION.

There is yet vast room for betterment, both in the further distribution of present scientific knowledge among farmers and in the working out of innumerable unsolved farm problems. One of the most important problems, and one that has received far too little attention, is that of soil adaptation,—the very basic principle of scientific agriculture. In the past too often have we treated all soils alike, fertilizing and cultivating them in the same way and growing indiscriminately any kind of crop on all kinds of soils. We have taken no cognizance of those differences which make one kind of land suited to some particular crop; nor have we adapted our methods of culture and fertilization to different types of soil.

Light sandy soils produce better and earlier vegetables than do heavy clay soils; the intermediate loam types are better suited to general farm crops like cotton, corn, and wheat, while clays and clay loams are best adapted to grass and forage crops. But the average farmer little heeds such matters, often depending upon season, fertilizer, or good luck to overbalance any mistake arising from his own shortsightedness. He too often knows nothing of the character of the soil below the furrow slice, although land underlain by a stiff clay may be suited to an entirely different crop or method of cultivation from a soil resting on a sand bed.

The utilization of the lands of the nation in exact accordance with those laws of plant adaptation which are determined by soil environment opens a field of almost unlimited opportunities for advancement in agriculture,—a field that until comparatively recent years has been given only slight recognition



ANALYZING SOIL FOR ALKALI, VENTURA COUNTY, CALIFORNIA.

by the students of agriculture. It is high time to lay aside those hit-or-miss methods which, though they may have been good enough for our forefathers with an abundance of productive virgin land, cannot be employed by our modern agriculturist.

THE WORK OF THE SOIL EXPERT.

It was with the primary purpose of correcting this old-style, chance farming that the Bureau of Soils, of the national Department of Agriculture, some ten years ago began to make a survey of the agricultural lands of the United States, by which it was proposed to locate and map every distinct and different area of soil in the country and to point out the exact crop adaptation and value of every soil type. In one sense this work amounts to an inventory of our arable lands, taken in order to show what we have in stock and what profits have been derived therefrom. Already about 100,000,000 acres have been mapped. Surveys have been made in nearly every State, and there have been studied over 700 distinct types of soil, each one differing from the other to such a degree that no two are either equally suited to the production of the same crops or are equally affected by the same cultural method.

The soil mapping is done by men who have had training at the best colleges and univer-

sities, and who are familiar with the details of practical farming, as well as with the sciences of chemistry, geology, meteorology, and civil engineering. Incidentally these experts must be hardy fellows, capable of handling any emergency from the fording of unfamiliar swollen streams or traversing marshes and swamps to the doctoring of a sick horse upon the desert. The men who, last summer, made a reconnaissance soil survey of that portion of North Dakota to the west of the one hundredth meridian camped out on the plains for weeks, sleeping in the open or in sleeping bags, often a hundred miles from their working base.

In the survey of an area (usually a county), the expert makes such frequent examinations of the soils to a depth of three feet as will enable him with the aid of a surveying outfit to delineate on a map, in different colors, each distinct type of soil. He will encounter not simply sand, sandy loam, silt loam, clay loam, clay, and the various classes of soils based upon relative content of sand, fine sand, silt, clay, etc.; but he will encounter black sands and gray sands, red clays, black clays, and white clays, productive sandy loams and sandy loams too highly impregnated with alkali salts for the abidance of plant life; overflowed silt loams and well-drained upland silt loams; rough stony land unsuited to other than forestry purposes; broken lands adapted only to grazing, and "bad lands" without agricultural value.

Samples of each type of soil are forwarded to the laboratories in Washington for the purpose of verifying the field man's observations and for supplying such additional information upon the character of the soil as may be derived from analytic examinations. In the alkali regions of the West where, in addition to the regular soil maps, alkali and water-table maps are made, it is necessary for the expert to determine by chemical analysis on the spot, the percentages of the various alkali salts injurious to vegetation and to ascertain the depth to the underground water level by boring.

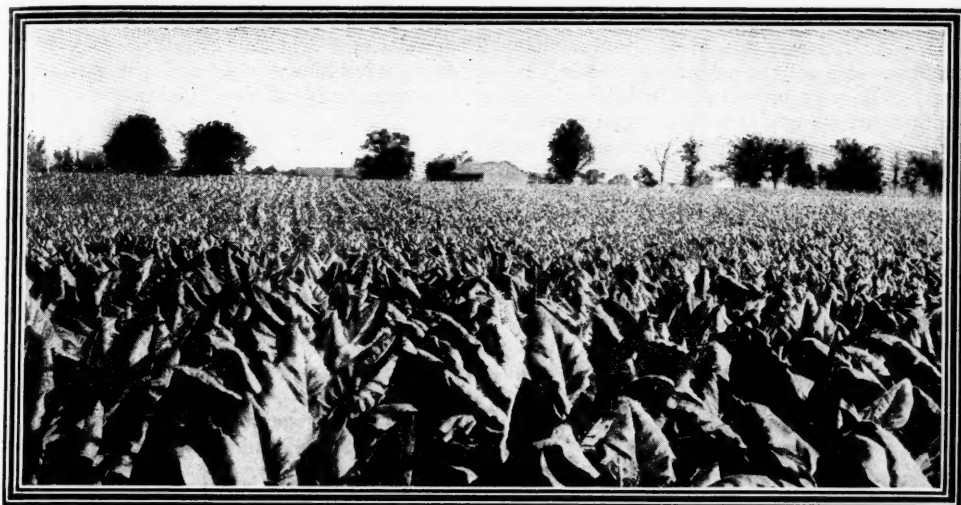
Each soil is named and shown on the maps in a distinct color, so that any one may determine the character and crop value of a tract of land at any location by a glance at the map. Accompanying the map in pamphlet form is a report which sets forth the specific crop adaptations and correct cultural method for each soil. These pamphlets are distributed free to the farmers of the area surveyed and to outside persons interested in settling or buying land within the limits of the area.

VARIETY IN SOILS AND SOIL ADAPTATIONS.

The Orangeburg group of soils, including all those grayish-brown soils having red sandy clay subsoils, which occur in large bodies throughout the Atlantic and Gulf Coastal Plain regions of the South, are the best upland soils for short staple cotton, and under



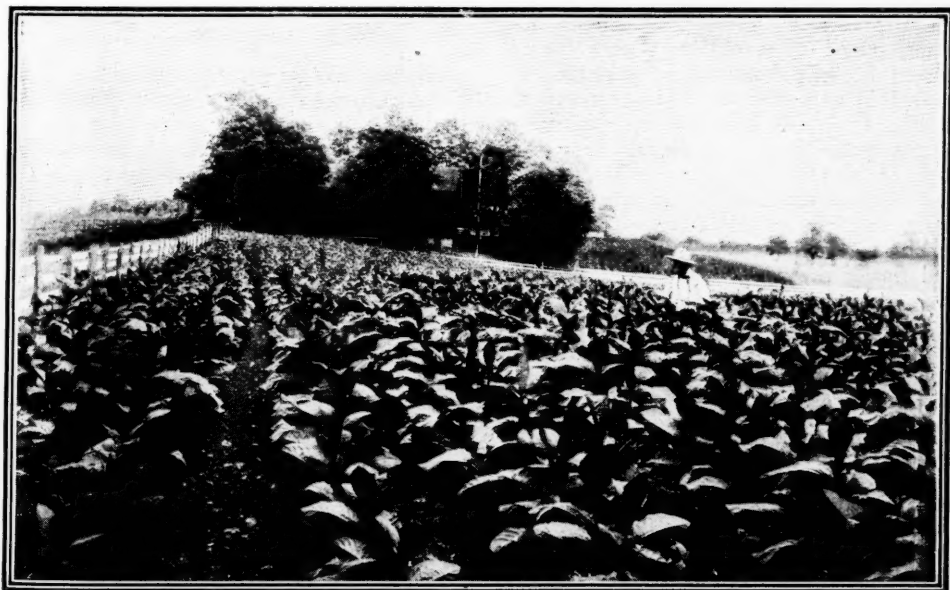
WHEAT ON ALKALI LAND, ONE YEAR AFTER RECLAMATION TREATMENT, SAN JOAQUIN VALLEY, CAL.



GLACIAL REGION TOBACCO SOILS IN WISCONSIN.

the proper climatic environment are the best peach and cigar-filler tobacco soils. The Norfolk group of soils, which comprises those gray lands having a bright yellow sandy clay subsoil, are the best trucking lands of the entire South Atlantic and Gulf Coast country. The black, poorly drained Portsmouth soils of this region, though unpro-

ductive in their natural state, are when drained excellent strawberry, cabbage, and corn soils; while on the other hand the black "prairie" lands of Alabama, Mississippi, and Texas, derived from a different geological formation, are not at all suited to vegetables, but produce splendid crops of alfalfa.

LIMESTONE SOILS IN THE RICHEST AGRICULTURAL COUNTY OF THE UNITED STATES,
LANCASTER COUNTY, PENNSYLVANIA.

Here in one geological region or soil province,—the Atlantic and Gulf Coastal Plain country,—are four series of soils having entirely different crop values. In each of these series there are upwards of a dozen types of soil, each type differing from the other in crop adaptation and value. The Norfolk sand is a fine early truck soil having but little value for grass, while the Norfolk silt loam is an excellent grass soil with only slight value for truck crops.

The Norfolk fine sandy loam of southwest Georgia and adjacent Florida territory produces a type of cigar-wrapper tobacco which can scarcely be distinguished from the imported Sumatra leaf, and this is the only soil found there that does produce this high-grade wrapper tobacco. The associated Orangeburg fine sandy loam of that section, though producing a cigar wrapper of inferior quality, makes a very fine grade of the Cuban cigar-filler type, excelled only by the very best leaf produced on the best lands of the most favored tobacco districts of Cuba. Sugar-cane sirup from the Norfolk fine sandy loam of this section has a delightful flavor, and possesses the bright color demanded by the trade, while that made from cane grown on adjoining fields of Orangeburg fine sandy loam has a dark color and inferior flavor.

Going from the Atlantic Coast country into the adjacent higher Piedmont section, a new set of soil conditions is encountered: instead of soils made up of materials deposited in a former sea which covered the Coastal Plain, we find here soils consisting of the residues of rock decay. The hard rocks of this region like the granites, gneisses, and gabbros, subjected to the action of rain, frost, ice, plants, molds, fungi, etc., for thousands of years, have crumbled down in place and finally through decomposition processes give rise to various grades of "red" and "gray" soils differing widely from each other and from the Coastal Plain soils in their relation to crop production and requisite cultural methods.

So on through all the great land divisions of the country each series of soils and the different types of the same series are suited best to some special crop, group of crops, or some particular kind of cultivation. There are the many soil groups and soil classes of the Appalachian Mountain and Alleghany Plateau regions, the limestone valleys and uplands, river and lake terraces, the Western Prairie Region, the Great Basin, the North-

western Inter-Mountain Region, the Rocky Mountains, the arid Southwest, volcanic-ash sections, wind-blown sand and silt regions, and extensive alluvial flood plains.

CLIMATIC EFFECT.

Aside from knowing the absolute effect of soil, correct soil usage requires that the grower take into account the climatic environment,—the effect of latitude, altitude, etc. The soil, for example, that produces a high-grade Sumatra cigar wrapper in Florida and southwest Georgia will not produce this type nearly as well in eastern North Carolina, but does produce an excellent quality of the "bright tobacco" used in the manufacture of cigarettes and granulated smoking tobacco. The delicious Albemarle Pippin apple of Virginia succeeds best only on a black loam soil in sheltered mountain coves between 1000 and 2000 feet elevation. In the lower elevations of the North Carolina fruit belt the coves on the north side of mountain slopes are best suited to fruit, while the coves with southern exposure require a higher altitude to give the required climatic environment. Peaches do well on the "Eastern Shore" and in the mountains of western Maryland, but are generally unsuccessful on the intervening Piedmont Plateau where frosts are apt to kill the early fruit buds.

DIFFERENT VARIETIES OF THE SAME CROP REQUIRE DIFFERENT SOILS.

Anything like an accurate estimate of the loss to American farmers through lack of knowledge in regard to exact adaptations of soils to crops and varieties is impossible, but the figures would no doubt be startling. The most successful farmer of the future will recognize that soils are not only unequally suited to different crops, but also to different varieties of the same crop, as in case of the cigar-wrapper and filler types of tobacco.

The Illinois Experiment Station in testing wheat varieties found that the Turkey Red with a four-year average of 38.6 bushels per acre in central Illinois, only yielded 11.4 bushels, or 5.17 bushels below Fulcaster wheat, in a three-year average in southern Illinois. Now there is little difference in the climate of these portions of the State, but there are vast differences between the well-drained black silt loam of the central part and the light-colored, poorly drained silt loam of the southern part of Illinois. The farmer of southern Illinois, not understanding the differences in variety adaptations



COTTON ON MISSISSIPPI ALLUVIAL LAND.

of these two markedly different soils, would be losing money at the rate of over five bushels of wheat for every acre cultivated to the Turkey Red variety.

The results of experimental work have shown that the amount of lint produced by a variety of cotton originated and improved upon a particular soil is not infrequently reduced to less than one-half when planted upon a distinctly different soil. There are countless instances similar to the experience of two neighbor farmers who, growing King's improved cotton as an experiment, using the same fertilizer and cultural methods, got entirely different results,—the one made better yields, while the other lost by the change to the new variety. The loser went back to his old cotton without suspecting or even attempting to learn that his failure was the result of using the wrong kind of soil. The successful farmer planted on Cecil clay, a cold-natured soil, slow to bring plants to maturity; hence his success with the early maturing King's improved. Sea Island cotton, a native of the southern Atlantic Coast, when grown on the interior upland soils rapidly loses its identity and length of staple.

MANURIAL REQUIREMENTS VARY WITH SOIL.

Of the \$80,000,000 to \$100,000,000 annually spent by the American farmer for fertilizers, it is safe to conclude a good proportion is partially or entirely wasted through indiscriminate use. The average farmer pro-

ducing the general farm crops pays little attention to the individual manurial requirements of soils, rarely checking upon the comparative benefits derived from varied mixtures on different types of land. An application of potassium sulphate, though highly beneficial for corn grown on certain black mucky lands, may be of no value to corn on an adjoining field of gray land, yet many farmers noting the good results of this fertilizer on one field would use it over an entire farm. Ground phosphate rock may be of much benefit to certain crops on one type of soil and of no value on another type, which perhaps may require applications of the acid-treated rock or "acid phosphate." One soil may need a phosphatic fertilizer, another potash, nitrogen, or lime, and still another a mixture of two or of all these fertilizing materials.

The stiff, black bottom-land, known as Wabash clay, which contains but little lime, is wonderfully improved by the addition of lime. There is in Texas another alluvial soil, a chocolate-colored, crumbly clay, called Miller clay, which does contain considerable amounts of lime. This type, which is one of the best cotton soils in the world, has been shown by the Bureau of Soils to be only mildly benefited either by simple liming or by addition of commercial fertilizer, but is improved materially by turning under green cowpeas.

Innumerable failures unquestionably have

resulted from unwise and indiscriminate use of chemical fertilizers which, notwithstanding that they have their proper place in the growing of crops, frequently are to be counted upon merely as accessory agencies for the maintenance and improvement of soil productivity. Too many farmers are drifting along in a half-hearted way, hoping for a turn of fortune through the discovery of some magic fertilizer, or through the revelation by a chemical analysis of "exactly what fertilizer the land needs." Lately an agricultural writer said, in effect: "Nowadays it is only necessary for the would-be successful farmer to take a pinch of soil here and there from his farm, send the mixture to a chemist, and receive in reply full instruction as to the kind of crops to grow and fertilizers to use." In the light of recent knowledge such teaching is harmful, and it is high time for the American farmer to know that with all the variety in soils that is possible on a single farm, there would be derived by carrying out the above instructions about as much good as would result from the analysis of a mixture of apples, pumpkins, and grapes to determine the chemical composition of the pumpkin.

The Illinois Experiment Station recently published the following statement on the subject of soil analysis:

Analyses of miscellaneous samples of soil collected by unauthorized and untrained persons, by inaccurate and non-uniform methods, usually imperfectly representing even a definite stratum from a single field, or sometimes a mere patch of ground, might be of little value even to the owner of the piece of land, and probably of no value to the agriculture of a State; while to attempt to do such work would only delay the progress of the systematic detail soil survey which . . . is being made to cover every type of soil on every farm.

In order to bring about an intelligent use of fertilizers, according to the present knowledge on the subject, it will be necessary to determine by field experiment the effect of the different fertilizing elements and the amounts it is advisable to apply and to show the farmers how to make use of these results on the different kinds of soil they may have, these having been located on the soil map.

UNLIKE CULTURAL METHODS FOR UNLIKE SOILS.

That the American farmer is lacking in systematized knowledge regarding cultural methods is evidenced by the fact that one



CORN ON THE WRONG SOIL.



CORN AND COWPEAS ON GOOD CORN LAND.

great school of agriculturists unqualifiedly opposes fall plowing, while another taking the opposite side as strongly advocates the practice universally, whereas the actual merits or demerits of fall plowing are determined by the kind and condition of the soil. For instance, there is no better way to put a compact, heavy soil into excellent condition of tilth than to plow in the fall so as to expose the upturned stratum to the beneficial action of winter freezes. The silt loams of Eastern Shore, Maryland, which are so inclined to harden that, in local parlance, "the land freezes in summer and in winter," can be greatly improved by fall plowing and by turning under coarse vegetable manure to open up the soil. On the other hand, there evidently would be no benefit derived from fall plowing a deep, loose sandy soil except to turn under needed vegetable matter; for the reason that it is naturally an open soil not in need of aeration.

EXPERIMENT STATION AND FARMER.

The State experiment stations are doing excellent work along the line of improving methods of fertilization and cultivation, plant breeding, etc., upon certain types of soil, but when we take into consideration the fact that a State may embrace a hundred or more dif-

ferent kinds of soil, the question arises: How are the farmers on these different types to take advantage of the experiment station results? The results of soil experiments are correctly applicable only to the specific soils upon which the experiments are made. Manifestly, then, the results may not be of value to any particular farmer unless he is located on the same kind of soil as that at the station upon which the experiments were conducted.

It would be of no special advantage to a farmer who cultivates deep Norfolk sand to receive a bulletin setting forth the good results secured from a particular method of fertilizing and plowing a stiff clay loam for wheat, because, in the first place, wheat cannot be grown profitably on Norfolk sand, and secondly, the fertilizer or character of plowing suited to a stiff clay loam is not at all the kind that a loose sandy soil requires.

In order to carry out any experimental work with fertilizers, crop varieties, crop rotations, etc., which would be beneficial to the greatest number of farmers throughout a State, it is necessary to know the soils of the State and to establish experiment stations at different locations upon those grades of land shown by the soil map to be the important types of the State. By having a soil map, an experiment made upon a red clay in one

part of the county or State could be applied successfully by a farmer who cultivates the same red clay in another part of the county or State. The North Carolina Experiment Station is establishing sub-stations throughout the State upon the more important soils as determined by the Government soil surveys in order to secure results beneficial not to one section, but to the whole State.

The successful methods of growing dark export tobacco, wheat, and hay as worked out by the experiment farm at Appomattox, Va., where 1650 pounds of tobacco, twenty-nine bushels of wheat, and five tons of field-cured hay were secured per acre, which yields much more than doubled those under the old-style methods, can be more clearly understood by the farmers of the county and more correctly applied by assistance of the Government soil map of Appomattox County, showing the location of the soils on which the experiments were made. This experimental work would be of still more value to the farmers growing dark export tobacco if there existed a soil map of the whole region producing that type of leaf.

SOIL SURVEYS AND SPECIAL CROPS.

The type of soil on which tea is being grown in South Carolina has been mapped in several parts of the South, and should tea culture prove a profitable industry it would be a simple matter to locate on a map all the soils adapted to its production. All through the lower part of South Carolina and Georgia are large areas of black land, easily reclaimable from present poorly drained conditions, which are not only unused to any extent for agricultural purposes, but are an actual menace to the health of the section on account of the hordes of mosquitoes they breed.

Soil surveys covering cultivated portions of these black soils already have shown that when drained and properly managed they are specially suited to the production of strawberries, cabbage, onions, and celery; and it is believed that experiments will show these same lands to be as well suited to the culture of upland rice as are the flat prairie lands of Arkansas and Louisiana. At a sub-experiment station, in the eastern part of South Carolina, it has been shown by a survey of the soils that typical areas of these unused black lands exist; therefore any valuable results accruing from experiments there can immediately be applied toward the development of these lands.

Some years ago when Sumatra cigar-wrapper leaf was being grown so successfully in Florida, the producers claimed that outside of a restricted area in one county the soils were unsuited to the production of this type of tobacco. It was shown by soil surveys that there was, outside the supposed favored belt, a considerable extent of the same soil; and since the completion of these surveys this industry has spread over several counties in Florida and Georgia. The 1902 crop of Florida Sumatra wrapper, grown on 3079 acres, amounted to 1,601,080 pounds, valued at \$480,324; the 1907 crop from 7500 acres turned out 6,937,500 pounds, worth \$3,122,000,—in other words, as the result of the soil surveys the tobacco acreage in Florida alone was more than doubled in five years; the production was multiplied four times and the value six and a half times. Investors basing their judgment upon the Government classification of the soils hastened to acquire and develop these lands, and coincident with an extension of the tobacco industry values jumped from \$8 to \$10 to \$75 or \$100 per acre.

The deep sandy soils of the Atlantic and Gulf Coast country, which a few years ago were considered practically worthless, are being used extensively for the production of early vegetables. A vast total area of these truck lands has been mapped and their value pointed out by the Bureau of Soils, with the result that, in some cases, the acreage valuation has risen from practically nothing to \$100 or more. It was on these lands, supposedly worthless, in the vicinity of Wilmington, N. C., that there were lately established colonies of immigrants, who are producing vegetables with great success.

The story of disappointed settlers attracted to new and untried regions by unscrupulous land agents is a sad one, a repetition of which should be avoided by extending soil surveys to determine the actual soil resources, possibilities, and needs of all sections of the country. With the assistance of soil maps and reports already available a mistake in the matter of selecting cigar-wrapper tobacco land in the surveyed portions of Florida and Georgia would be absolutely inexcusable on the part of any one. Advance soil surveys of uncultivated or sparsely settled lands such as occur in the ranching sections of the Southwest and the flat, cut-over pine lands of the Southern States, followed by experiment work, would do away with much costly and haphazard trial.

The reconnaissance survey of western

North Dakota was undertaken last year to ascertain the soil resources and agricultural possibilities of this sparsely settled region for the purpose of directing intelligently the agricultural development of these little used lands. There were mapped a large area of level to gently rolling land admirably adapted to dry-farming, a considerable area too broken for farming but suitable for grazing purposes, and still other classes of land, some of which is too rough for any kind of agricultural usage.

In the arid regions of the West, where the rainfall is too little to leach out water-soluble mineral salts, accumulations of alkali in the surface soil frequently cause serious damage to vegetation. The ordinary cultivated crops will not thrive on a soil containing more than 1 per cent. of the milder forms of alkali, while in case of the deadly "black alkali" the limit of endurance is only 0.05 per cent. These salts, though they may not be originally present in the surface soil, often are brought up by a rise of the water table as a result of over-irrigation or by upward capillary movement of the soil moisture. On account of the presence of alkali it is necessary in many sections of the West to make, in addition to the ordinary soil map, a water table map and an alkali map, to protect the land buyer and to serve as a guide in planning irrigation works.

In the readjustment of our agricultural population,—a movement on the part of those seeking a milder climate or cheaper lands, or lands suited to special lines of farming,—there is no possible way of giving the emigrant as satisfactory forehand knowledge of the lands and agricultural possibilities of a section as can be done through the soil maps and unprejudiced reports of the Bureau of Soils. The most helpful assistance in the distribution and location of immigrants to the best advantage of immigrant and country can be offered through this available knowledge of the exact possibilities of the soils in all sections of the country.

When we think of the potential productivity of our large area of unused lands and lands reclaimable to agriculture, and further take into consideration the fact that we have hardly begun to get out of the soil already in use what there is in it, there seems to be no need to worry about the future.

From the standpoint of the Bureau of Soils, a most hopeful view of the permanency in the crop-producing power of our lands has been taken; the inherent fertility of our soils has not diminished so frightfully as alarmists and theorists would represent; and there is comparatively little land topographically suited to agriculture that cannot be made to produce as good or better crops than in past seasons.



STRAWBERRIES ON SOIL ADAPTED TO SPECIAL INDUSTRIES, DELAWARE.

DOES BREAD-HUNGER THREATEN THE WORLD?

THE WORLD'S PRESENT PRODUCTION AND CONSUMPTION OF WHEAT AND THE FUTURE SOURCES OF SUPPLY.

BY W. C. TIFFANY.

(Managing editor of the *Northwestern Miller*.)

FOR nearly two years unprecedentedly high wheat prices have prevailed, and last spring the highest point in twenty-two years was reached, with the one exception of 1898, the year of the Leiter corner. How far these prices are due to manipulation no one can say, but making due allowance for the influence of the so-called corner of James A. Patten and his followers there is no question that they were caused to a very large extent by the shortage of wheat stocks throughout the world.

Many mills on the continent of Europe have this year been obliged to shut down for lack of wheat to grind, and the mills of Great Britain were for some time often close to the same position. Throughout Kansas, Missouri, the Middle States, and Ontario many mills were obliged to cease grinding or to run only half-time for the same reason. Flour in turn advanced, and many of the smaller bakers in the United Kingdom and in this country who were caught with short supplies of flour have been forced into bankruptcy. The price of bread has been advanced in London and Glasgow to seven pence for the quartern or four-pound loaf, and in many places in this country the loaf has been either reduced in weight or advanced in price.

In view of these facts the statement is now often made that the long predicted time has come when the world's consumptive demand for wheat has overtaken the production. Ten years ago an English scientist, Sir William Crookes, predicted that in view of the growth in population and the approaching occupation of all lands available for wheat-growing there would in a few years be an insufficient production of wheat to supply the world's demand for flour.

Statistics compiled by the United States Department of Agriculture show that the

world's total production of wheat during the last four years was as follows:

	Bushels.		Bushels.
1908.....	3,172,814,000	1906.....	3,423,704,000
1907.....	3,103,992,000	1905.....	3,322,000,000

James W. Rush, of London, England, one of the best informed and most accurate wheat experts in the United Kingdom, recently said:

Seeing that the world's normal consumption of wheat increases about 40 million bushels per annum and now amounts to about 3380 million bushels, probably to be reduced to 3300 million bushels, owing to the economy caused by high prices, a comparison of the crops for the last four years gives the following results:

Crops of 1905 and 1906.....	6,745,000,000
World's consumption.....	6,525,000,000
Surplus.....	220,000,000
Crops 1907 and 1908.....	6,275,000,000
World's normal consumption.....	6,675,000,000
Deficiency.....	400,000,000

The deficiency of the past two years, therefore, excels apparently by 180 million bushels the surplus left by the two previous crops. In other words, the world's reserve stocks at the harvest of 1905 have to be drawn on to this extent in order to supply current demands.

If the world's possible wheat production had reached its limit we should be facing a very serious situation, but that is far from being the case. In the last ten years the world's wheat crop has increased over 500 million bushels, and the world's consumption not to exceed 400 millions. We know that the consumption of wheat will continue to increase with the growth of population, but where is the increase in production to come from? That, after all, is the vital question.

THE NEW CANADIAN SUPPLY.

Any increase in our supply of wheat must come from new lands or increased yield per acre. Considering first the available new



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HARVESTING THE WHEAT CROP BY UP-TO-DATE METHODS.

(A thirty-three-horse team harvester cutting, thrashing, and sacking on a great wheat farm in Washington State.)

lands, we find a vast empire in Western Canada extending west of Winnipeg for 1000 and northward for 300 miles, a great part of which is available for wheat culture, and which produces some of the finest wheats in the world. The Red Fife wheat of this section produces the "No. 1 hard" grade known as "Manitoba" and the blue stem wheat, the "No. 1 hard" grade, known as "Northern," which equal the famous "No.

1 hard" and "No. 1 Northern" of Minnesota and the Dakotas.

In the Canadian Northwest these spring wheats, blue-stem and Fife, are grown almost exclusively, excepting in part of Alberta, where the climate is sufficiently mild to grow winter wheat. Here we find that the progeny of some thirty bushels of wheat brought by the Mennonites from the Crimea in the early '70s to Kansas, and which as the famous "Turkey red" wheat constitutes the principal crops of Kansas, Nebraska, and Oklahoma, has retained its wonderful yielding and milling qualities and is rapidly becoming an important factor in the wheat markets of the world. So pure is the strain of this old Crimean stock that when an infusion of new seed wheat is wanted to keep up the standard in Kansas it is sought in Alberta. Alberta's growth as a wheat-growing territory may be seen from the fact that five years ago it produced about 800,000 bushels of spring and 150,000 bushels of winter wheat, whereas last year it produced nearly 3,000,000 bushels of spring and nearly 2,500,000 bushels of winter wheat.

Important as Alberta is becoming as a wheat producer, and even more so the western part of Manitoba, which last year grew over fifty million bushels of wheat, Saskatchewan, with an area of a quarter of a million square miles of territory, is undoubtedly destined to supply a far greater increase in

wheat acreage. Eliminating her countless miles of swamp, lake, and muskeg, there still remains an empire of land suitable for wheat growing, of which only a small proportion is as yet under cultivation.

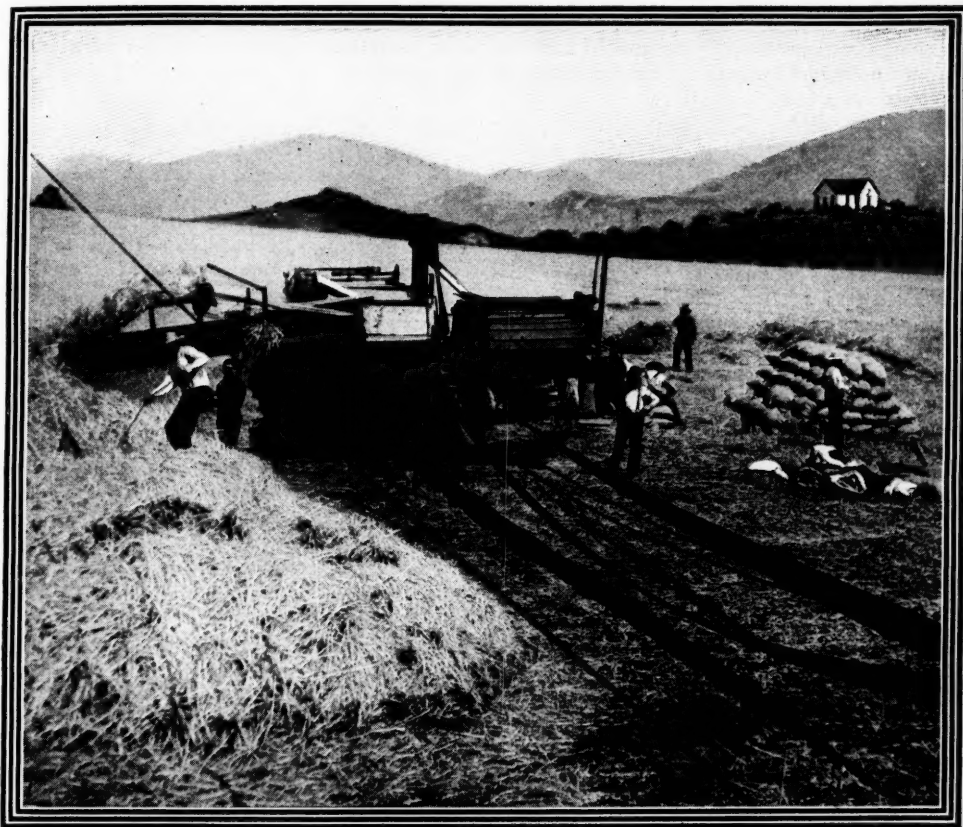
The Canadian Northwest is being settled with a rapidity such as the world has never before seen, and the intense activity there in railroad construction is bringing her crops within reach of the market. The wonderful development which is going on in this country is largely due to the class of settlers. They are to a great extent farmers from Iowa, Minnesota, and other Northwestern States, who, unlike the pioneers who settled our own West, have, as a rule, experience, money, and farm implements. Ten years ago Saskatchewan produced less than five million bushels of wheat; last year she produced over 43 millions. In ten years more she promises to completely change the conditions of the wheat markets of the world.

Still north of Saskatchewan lies another great empire with possibilities for further wheat acreage, the Peace River Valley in Athabasca, twelve hundred miles north of Montana. This territory, tempered by the Chinook winds and its proximity to the mountains, has grown a superior quality of wheat for the last sixteen years. At Fort Vermillion, 600 miles above the northern boundary of Alberta, the Hudson's Bay Company has operated a flour mill for years,



Photograph by Underwood & Underwood, N. Y.

THRASHING WHEAT IN WESTERN CANADA.



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THRASHING WHEAT IN THE SAN JOAQUIN VALLEY, CALIFORNIA.

(The machine is operated by an engine which uses the straw for fuel.)

which grinds the wheat of the Peace River Valley. The Peace River country, however, differs from the prairie lands of the southern provinces with their great stretches of miles of land of uniform fertility, for here the fertile land is broken by rock and stretches of inferior soil. In spite of this, however, the land available for wheat-growing is vast in the aggregate.

ARGENTINA, SIBERIA, AND MANCHURIA.

Argentina is another country of magnificent possibilities in wheat production. In 1900 she produced 72,000,000 bushels on about 8000 acres, in 1908 over 200,000,000 on 15,000,000 acres. Señor Tidblour, of Buenos Aires, an authority in such matters, states that there are more than 80,000,000 acres in the republic suitable for successful wheat farming which are still virgin soil.

When we consider the available wheat

acreage of Siberia the figures are still more startling. The economic expert of the division of foreign markets of the United States Department of Agriculture estimates the area available for wheat at three or four times the area planted, which is from 30 to 40 million acres. In western Siberia out of 80 million acres $7\frac{1}{2}$ million are in crop; in middle Siberia, 2,186,000 acres out of 73,600,000; in Transbaikalia, only 750,000 out of 64,000,000; in Amur, 0.6 per cent., and in the Ussuri-Littoral region, 0.3 per cent.

The remaining country which may largely increase the world's production of wheat from new lands is Manchuria. So far the cultivation of land there has been confined to crude methods, and yet northern Manchuria raises an annual crop of about 35,000,000 bushels of wheat. It is estimated that this region under proper cultivation could easily produce a crop in excess of that

of Minnesota and the Dakotas. A superior class of Chinamen is pouring into Manchuria from northern China at the rate of 200,000 to 250,000 a year, who are rapidly extending her wheat fields. The soil is fertile, producing from seventeen to twenty-five bushels to the acre, and tests made of the wheat show it to be rich in gluten and of superior milling qualities.

EFFECT OF IRRIGATION AND DRY FARMING.

Excepting through dry farming and irrigation the area of new land in the United States which can be devoted to wheat-growing is now quite limited, and the total area is more likely to decrease than increase as the country becomes more densely settled and diversified farming becomes more general. This is already very noticeable in certain parts of the country. In California, for instance, the wheat acreage has decreased over 50 per cent. since 1900. The amount of wheat acreage to be added by irrigation is as yet entirely conjectural. If five million acres of arable land are gained, as is estimated, by irrigation projects now under way or contemplated and one-fourth of this land were given to wheat-growing, which is probably too liberal an estimate, the increase in acreage would not make any very material addition to the world's production of wheat.

The amount of wheat which may be produced through dry farming in semi-arid regions, however, while also entirely conjectural, is by no means negligible. Argentina, Australia, eastern Russia, South Africa, Saskatchewan, Alberta, Montana, the Dakotas, Nebraska, Kansas, Colorado, Utah, and Nevada have many millions of acres which can be cultivated in this manner. The growing of wheat by dry farming is already carried on successfully and on a large scale in many parts of this country west of the Mississippi Valley and in the Canadian Northwest, on lands which a few years ago were considered worthless for such purposes. The so-called Campbell system of dry farming, which consists of packing the ground at a depth of seven or eight inches below the surface by means of implements constructed for that purpose, so as to prevent the loss of moisture by percolation and the creation of a mulch of loose soil above, to prevent evaporation, is no longer an experiment. In semi-arid regions having an annual rainfall of only fifteen inches sufficient moisture is preserved by this system from the melting snows and spring rains to carry the crop to maturity.

The selections of seed developed from the drought-resisting products of the tablelands of Turkestan and the steppes of Russia and Siberia also form an important feature in successful dry farming.

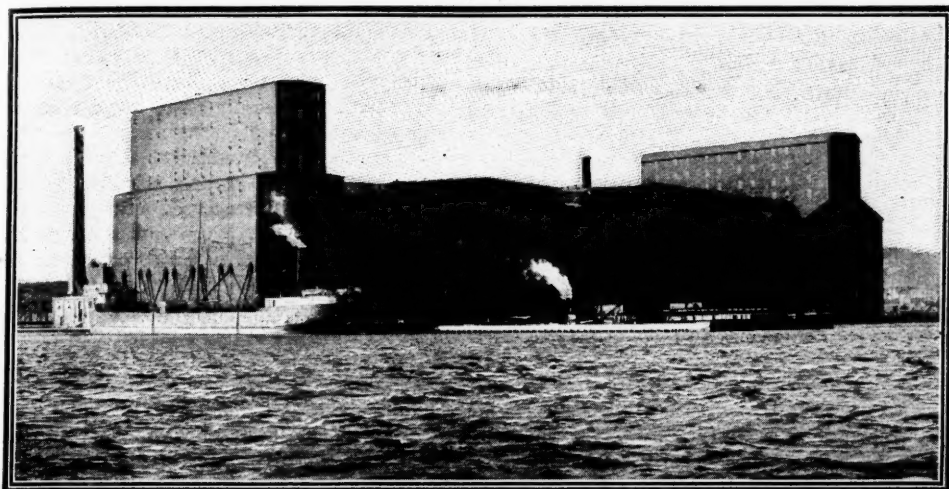
INCREASING THE YIELD—CROP ROTATION.

Of equal importance with the development of new lands for the cultivation of wheat is the possible increase in yield per acre on the lands which are now growing wheat through better farming methods and the selection and development of better-yielding seed. The settlers of the Central and Western States found a soil of apparently inexhaustible fertility. By reckless farming methods they had robbed the soil of this fertility, so that the present yield of wheat per acre even in the newer States has become deplorably low.

Prof. Harry Snyder, in charge of the department of agricultural chemistry and soils at the experiment station of the University of Minnesota, says that soils which have produced grain crops for ten or fifteen years without rotation of crops or other treatment contain from a third to a half less humus and nitrogen than adjoining virgin soil and retain less moisture and dry out more readily. On lands where twenty-five and thirty bushels of wheat per acre were once not unusual crops, the farmer to-day is harvesting twelve or thirteen bushels and often less.

Owing to the large area of the fields of the great wheat-producing States of the West, the restoration of their exhausted soils by the use of manure and commercial fertilizer is not practical on an extensive scale. The farmer has, however, a simple means at hand for restoring his soil to its original fertility in the systematic rotation of crops. Prof. Andrew Boss, agriculturalist of the experiment crops of the University of Minnesota, states that if wheat is grown for five years out of seven and other crops the other two years the land can be restored to and kept at a high producing point for an indefinite period.

The average wheat crop for the whole United States for ten years to 1908 was 13.78 bushels per acre; for five years to 1908, for Minnesota, 12.56; for North Dakota, 12.08; for South Dakota, 12.14. In Minnesota a steadily increasing and substantial improvement in yield per acre has been made through the adoption of crop rotation and the use of better seed. Dividing the time from 1882 to 1906 into five-year periods gives the fol-



THE WORLD'S GREATEST WHEAT ELEVATOR.

(It was built by the Canadian Northern Railway at Port Arthur, Ont., and holds 7,000,000 bushels of wheat.)

lowing average yields in bushels for a quarter of a century:

1882-6.	1887-91	1892-96.	1897-01	1902-6.
12.2	12.5	12.8	13.7	14.0

Thus in a period of twenty-five years the average yield per acre in Minnesota has been increased 1.8 bushels, or, based on the acreage seeded to wheat in 1908 by over nine and one-half million bushels, an increase of over 14 per cent.

When we compare the average wheat yield of the United States for the last ten years of 13.78 bushels per acre with the average yield in England during the same period of 31.13 bushels per acre, the average yield in France of over 20 bushels and in Germany of 28 to 30 bushels, we at once see the stupendous possibilities of increase in the world's production of wheat through proper methods of husbandry. An increase of only five bushels an acre in the yield of the United States alone would amount to about 238,000,000 bushels.

USE OF BETTER SEED.

Another source of prospective increase in wheat production is the use of better seed. The agricultural schools of the Western States have been working on this problem for years and by selection and cross-fertilizations have produced varieties of the best milling wheats which show startling figures as to increases and yield. While Minnesota's yield has averaged about 12 bushels per acre during the last decade the Minnesota Experi-

ment Station has developed a variety of bluestem wheat, known as Minnesota No. 169, of the best milling grade, which for fourteen years has averaged 26.7 bushels per acre, grown under conditions no more favorable than the average crop of the State. Another variety developed by cross-breeding from Minnesota No. 169 has averaged 28.9 bushels per acre under normal conditions of cultivation for a period of five years. Prof. Andrew Boss estimates that the general use of seed wheat of the grade of Minnesota No. 169 would add at least three bushels to the acre in the Minnesota yield, and that if the use of such seed should be made on ground where a proper rotation of crops was practiced the increase would be many fold greater.

The development of wheats of higher yielding capacity is yet in its infancy and the possibilities in this direction can only be guessed from what has already been accomplished. It must not be forgotten, however, that the creation of new species is a matter of slow growth, involving years of patient work, of selection and rejection in strengthening and developing by means of cross-fertilization. Years must elapse in the cultivation of new varieties before definite results can be attained. The results of one year's yield are not decisive, but the average production of a series of years must be taken before data of any value can be obtained, and after a heavy yielding wheat has been produced it must be subjected to a milling test

to ascertain whether it will produce a flour of good bread-making qualities. Some of the most promising wheats in point of yield have had to be rejected because they were deficient in milling qualities.

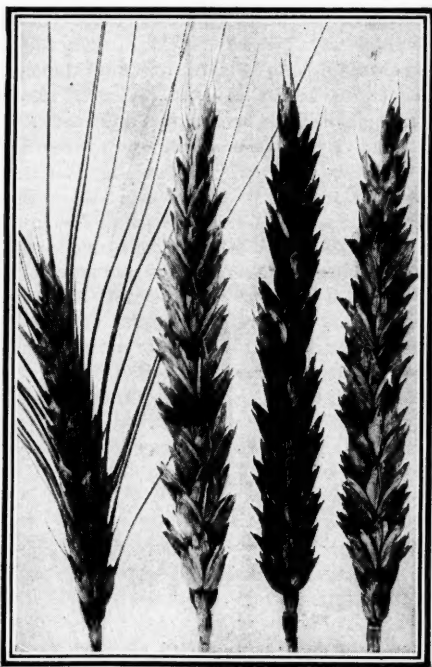
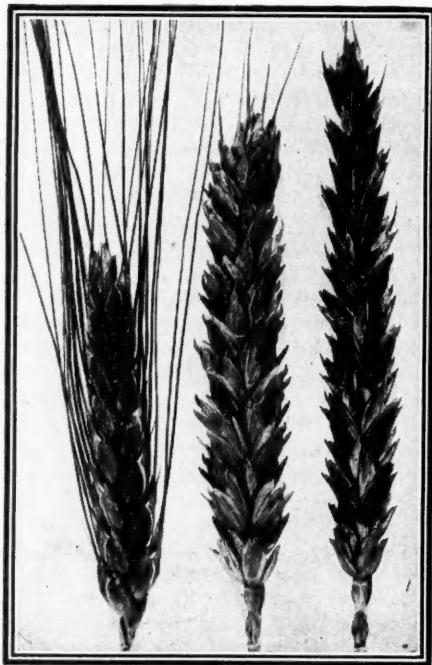
The creation of a new species begins with the selection of a single kernel. While the beginning is thus insignificant, the result may be the development of a progeny which will control the wheat markets of the world. When this kernel is planted the following year it produces a few hundred kernels, which in turn are planted the following spring in single hills twelve inches apart. They receive the most scrupulous care and are given every possible attention to develop them into vigorous plants.

When these plants are in flower the process of the creation of a new species by cross-fertilization is ready to begin. The wheat flower being a perfect one,—having all the essentials of reproduction within itself,—the anther of the flower is removed to prevent self-fertilization. The anther is then removed from the flower of some selected head of wheat and its pollen sifted into the stigma

of the first flower. This process is repeated again and again with other flowers, and out of them all a few successful unions are made. When the process of fertilization is complete the head is wrapped to avoid contamination from any outside source.

When the head, which has been cross-fertilized, is ripe, the kernels are threshed out and only the best preserved. For a series of years thereafter the process of selecting the best kernel goes on. When several thousand kernels have been selected they are planted in nursery beds, one seed in a hill, four inches apart each way. When ripe perhaps 500 of the best yielding heads are selected and weighed and about one hundred of those yielding the heaviest preserved. These heads are shelled and the grain weighed, and the grade determined by inspection,—about fifty of the plants being then selected for mother plants.

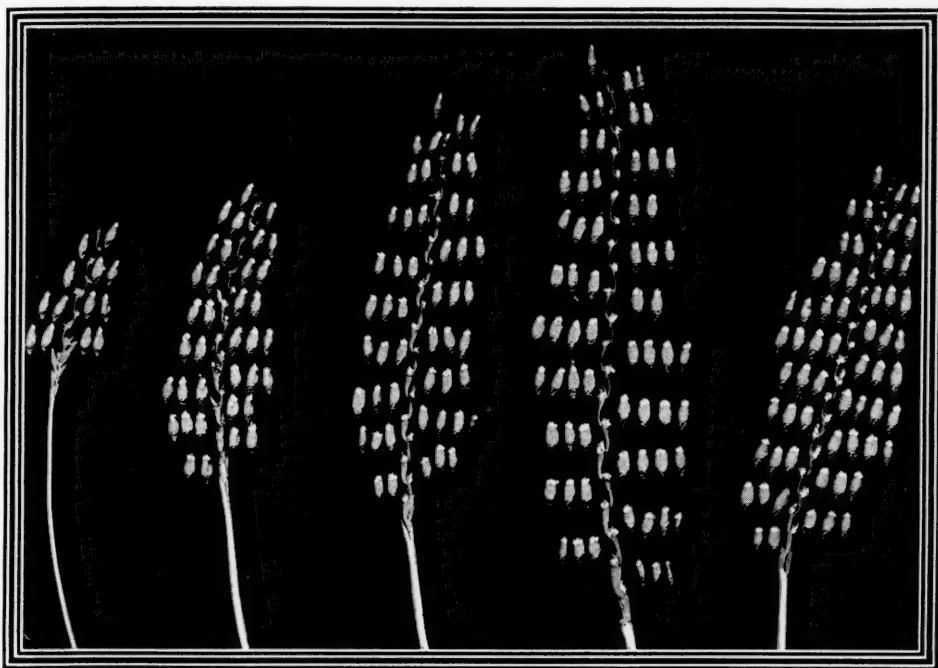
The second year 100 seeds from these mother plants are sowed in plots. When ripe the number of plants reaching maturity in each plot is determined, and the weight of the grain being divided by the number of



WHAT SCIENCE IS DOING IN THE BREEDING OF HYBRID WHEATS.

(A promising new hybrid wheat in center, with parent varieties on either side. The result of plant breeding.)

(The two middle wheats are hybrids resulting from a cross fertilization of the two outside varieties.)



A GRAPHIC ILLUSTRATION OF THE ACTUAL DIFFERENCES BETWEEN SMALL AND LARGE HEADS OF WHEAT.

(Showing the importance of uniformity in the quality of seed.)

plants, the average yield of the progeny of each of the mother plants is secured. One hundred seeds of these fifty varieties are planted and at the end of the third year all are discarded, excepting the five or ten of those stocks which average the best per plant for the three years. The new varieties are then grown in larger plots to obtain sufficient seed for field tests, and then for three years they are grown under field conditions. If their yield, milling, and baking qualities then show an improvement over the standard wheats they are distributed to the farmers.

It is thus seen that the creation of a new variety of wheat which can increase the present yield is a matter of a long series of years, and if it were not for the fact that so much has already been accomplished in this direction it would be easy to overestimate the increase for the immediate future in the production of wheat from this source. Moreover, even after a higher yielding variety of wheat has been established a considerable period must elapse before general use.

In view of an estimated yield this year of 235,000,000 bushels of wheat, or 60,000,000 bushels more than in 1908, in the Da-

kotas and Minnesota, of a substantial increase in the yields of Saskatchewan, Manitoba, Alberta, the Pacific Northwest, and South Russia, and in view of a much heavier yield in the Central and Southwestern States than seemed possible a few months ago, the world's stocks of wheat seem in a fair way to be in a measure replenished this year and the increasing consumption supplied, in spite of short crops in some of the important producing countries. Already the price of wheat has fallen greatly from the recent highwater mark; and while the days of cheap wheat may not return, there can be no question that the production this year will be adequate to supply the world's demand for flour. When we consider that the virgin land available for wheat growing far exceeds the area now under crop, the uncounted acres amenable to dry farming, the enormous increase in yield which can be added through rotation of crops and other improved methods of farming and the potentiality of better seed, we need have no fear, although consumption may at times press hard on production, that bread-hunger will for any considerable period threaten the world for generations to come.

THE WORK OF THE ILLUMINATING ENGINEER.

BY DONALD CAMERON SHAFER.

"WE have made a new profession, that of illuminating engineering, but we are still very far from the perfect artificial light," remarked a well-known inventor. "Only a little while ago there were no men to specialize on artificial lighting. Such work was trusted to the architect, who did the best he could with his meager knowledge of the subject. To-day illuminating engineering is a recognized profession and to-morrow colleges will be granting degrees to new illuminating engineers. You smile, but I have helped to make professions before. I can well remember when we talked about electrical engineering as a profession, and people laughed in our faces. To-day there are thousands and thousands of electrical engineers. Long before we perfect artificial illumination the new profession will be recognized."

"Is there such a thing as a perfect source of artificial light?" asked one of his auditors.

"Oh, yes, we already know of such a light. Almost everybody has seen this light, but all the wise heads in the world cannot read this simple secret which Nature has seen fit to bestow upon her most lowly forms of animal life. Behind you sits a darkened cabinet; inside of it is a little box. Shake that box a bit and you will see the only perfect source of light known to man."

With eager faces the visitors crowded about the cabinet. Then with the look of disappointment one turned towards the inventor with the remark: "Why, there's nothing but glow-worms and fire-flies in that box!"

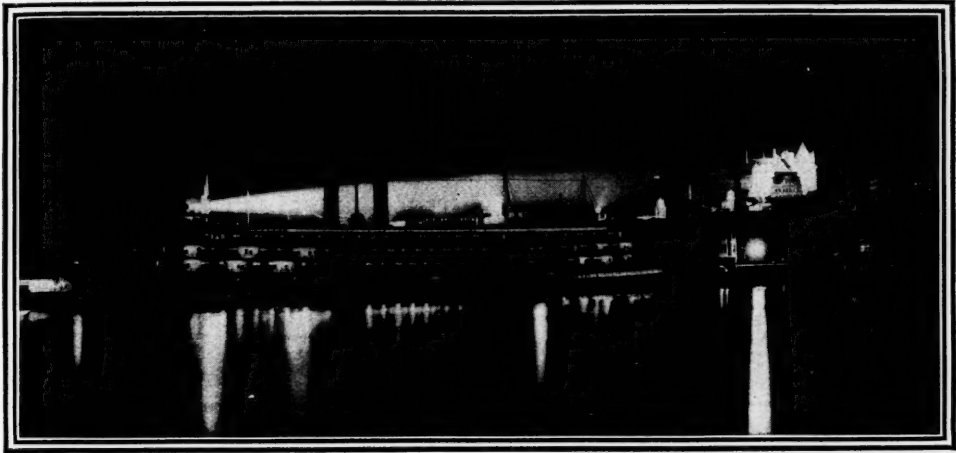
"Nothing but glow-worms and fire-flies," remarked the scientist, "and yet each one of those little creatures carries around a secret worth millions and millions of dollars. If I could discover that secret to-day, inside of a year I could make the fortunes made out of oil look like the widow's mite. For, do you know, each one of those fire-flies and glow-worms carries a tiny light which they turn on and off at will? This little light gives very little or no heat, whereas the best incandescent electric lamps we can make waste

more than 90 per cent. of the electrical energy in useless heat for what little light they give. Take that sixteen-candlepower lamp above you, for instance; it consumes fifty watts of electricity to produce sixteen candlepower of light. Only two watts of this go to make the light and forty-eight watts are wasted in heat. If I could reverse those conditions I could get twenty-four times as much light, or 384 candlepower, from the same amount of current. Fire-flies and glow-worms know the secret of light without heat,—man does not. But some day we will read this puzzle, as we have read so many before, and the nights will be as day. In the depths of the ocean even the penetrating light from the sun is barred, yet there is light, and electric light, too. Almost every one of those deep-sea creatures carries a tiny light similar to that of the fire-fly,—a light that can be turned on or off at will. We assume that the 'electricity' for this light is produced by nervous energy; beyond this we really know nothing.

"But with all this study and research, while the secret remains unsolved, we have improved all the sources of artificial illumination and incidentally, as I said before, produced the illuminating engineer. Born of necessity and economy, it is a good thing the illuminating engineer is here, for we have been shamefully neglecting our health, eyesight, and pocketbooks ever since man first snatched a burning brand from the fire and lighted the way into his cave."

DEVELOPMENT OF THE NEW PROFESSION.

The elder Agassiz, the famous Swiss scientist, once remarked that every great invention, every new thing, had to pass through three stages of development: First, when everybody said it was impossible; second, when it was thought contrary to religion; and third, when everybody said it was known before. Illuminating engineering has already passed the first stage and is well on its way towards the end of the second, where very little murmuring is heard against the new branch of applied science, so opposed to the



SEARCHLIGHT OF THE HUDSON RIVER STEAMER, "C. W. MORSE," ILLUMINATING THE CAPITOL BUILDING AT ALBANY, A MILE DISTANT.

ancient dogmas and creeds of the commercial world.

All engineering involves questions of economy, and the best engineering practice is that which accomplishes the best results at the least cost. When the mining industry demanded men to make a systematic study of geology and minerals, so that they might be of value to their employers in keeping them from wasting money on worthless claims, the mining engineer sprang into being. When the cry for electrical inventors rang over the world men began to study and research into this branch of science and the electrical engineer came into his own. Giant bridges and lofty buildings, continental railroads and waterpower developments demanded civil engineers, and even the great industries have produced their mechanical engineers.

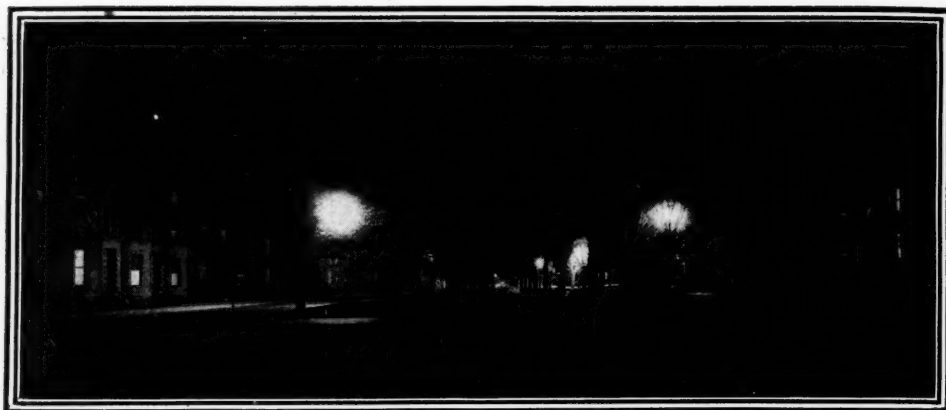
While this new profession is distinctly American it is true that the pioneer work was started in England, when Mr. A. P. Trotter developed several new methods of calculating illumination and advocated a more rational use of light. But from this humble start it was Americans who made this new profession. Illuminating engineering belongs to this country, and the veterans in the profession can be counted on the two hands. Ten years ago the infant had not even been christened, and the rapidity with which this science has been accepted and placed among established professions has no parallel in history. After centuries of ignorance, prejudice, and malpractice, in the short space of

half a dozen years illuminating engineering has risen to a position of recognized standing and independence.

WHAT THE ILLUMINATING ENGINEER HAS LEARNED.

Light travels at the incomprehensible speed of 186,000 miles a second. This is equally as fast as electricity travels and is so nearly instantaneous that the most delicate machines are necessary to measure it. But, swift as it is, light and illumination, though intangible, can be definitely measured. The laws of light, too, are well understood and are comparatively simple.

The source of light (except that of the glow-worm and the fire-fly) is a substance which is raised to such a temperature that it sets up waves in the surrounding ether, which, when falling upon the eye, produce the sensation we know as light. It is acknowledged that the source of light in the sun is a great mass of white-hot matter. The atmosphere enables us to see sunlight, and beyond the earth's atmosphere sunlight is said to be invisible to human eyes. The source of light in an arc lamp is the heated particles of carbon floating between the white-hot tips of the electrodes, which are raised to a high temperature by electricity. In an incandescent lamp the light source is a thin filament maintained at a high temperature inside the glass globe by the passage of a current of electricity. In gas and oil lamps the light is thrown off by the myriad particles of carbon heated to incandescence in



BOSTON, THE BEST LIGHTED CITY.
(Latest types of arc lamps on Commonwealth Avenue.)

the flame. In the new gas lamps it is the white-hot mantle which produces the light.

The human eye can withstand ordinarily, without fatigue, a brilliancy of about five candlepower per square inch of surface. The intensity of light sources ranges all the way from the two or three candlepower per square inch in the ordinary candle flame to 600,000 candlepower of the sun when at zenith. This means that a square inch of candle flame gives off from three to four candlepower, while every square inch of the sun's surface gives 600,000 candlepower. The intensity of the arc light ranks next to that of actual sunlight, being about 10,000 candlepower per square inch. The new metal filament lamps give about 1000 candlepower, which means that if we had a ball of tungsten as big as the sun, heated by electricity, it would throw off a thousand candlepower of light for every square inch of its surface.

By means of a refraction prism a beam of light may be separated into the various colors of which it is composed. White light, for example, is composed of all the colors of the rainbow, harmoniously blended together. The sun, high in the sky, gives a pure white light; the arc and metal filament electric lamps give a light that is very nearly pure white; the light from the mantle burner is greenish white; sky light is bluish white; the kerosene lamp gives an orange light; the open gas flame is yellow; the candle produces an orange yellow light. This difference in the quality of light is due to the difference in temperature at which the heated elements operate.

The fusing point of tungsten (3050 degrees Centigrade) is higher than any other known metal, which enables it to operate at the very high efficiency obtained in the tungsten lamp. One of the laws of incandescent light is that the higher the temperature the better the light and the greater the economy of current consumed. Up to a few years ago tungsten was known only in laboratories, and then only in a very impure state and on account of its rarity the price was very high. But latter-day prospecting has resulted in the finding of vast bodies of the ore, and the price has correspondingly dropped to about \$7 a pound. It would be even lower than this but for the difficulties in refining the metal. Only with the electric furnace is it possible to produce tungsten in its pure form. Pure tungsten is hard enough to scratch glass; it is almost impossible to melt it; it is malleable to some extent, but not ductile. Because it cannot be drawn into wire the wire-like filaments employed in the electric lamps are made by a commercialized laboratory process.

These new tungsten incandescent lamps, with the same consumption of energy and expense to the consumer for current, give nearly three times the illumination of the old carbon lamps. The lighting companies were quick to see the advantages of this wonderful improvement, and are now encouraging their customers to use the new lamps, making it plain to them that they can obtain three times as much light of a better quality for the same money.

To those whose homes and business places were already abundantly lighted it was ap-

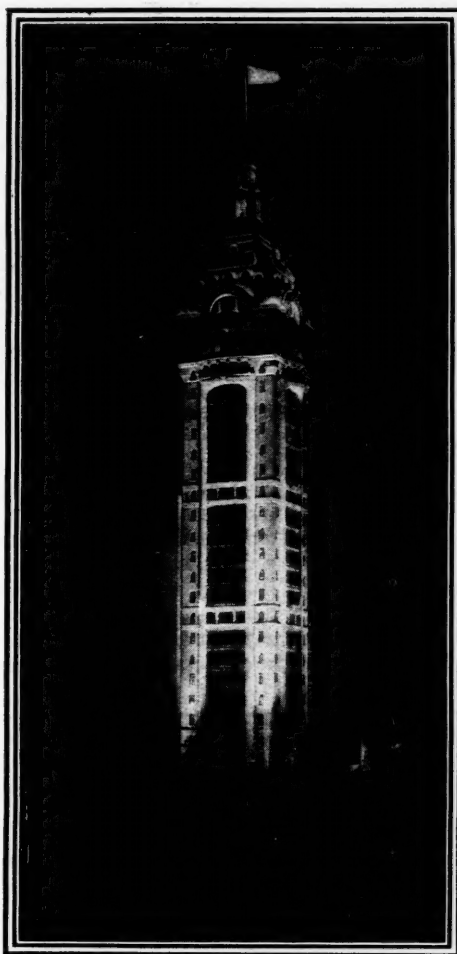
parent that the new lamps would easily give the same light as the common incandescent lamps for one-third the cost. A home that was lighted by electricity for \$2.35 a month could be lighted with the new lamps for seventy-eight cents. Not only that, but the light from the new tungsten lamps proved to be nearly pure white, akin to actual sunshine, soft, pleasing, and beneficial to the eyes, and not of a yellow cast like the common incandescent lamps.

Within the past few months tungsten has revolutionized the electric lighting world, and has proved the greatest boon to the consumers of electric light since the discovery of the incandescent lamp.

To fully understand light one has to assume the presence of a wave motion set up and maintained by the source itself. The color of the light depends on the length of the wave. The light waves producing the colors in the blue end of the spectrum are very short compared with those that produce the colors near the red end. The light source which we know as red gives off only waves of the length which produce that particular color. A body appears red because its surface is capable of reflecting only waves of lengths corresponding to red. If an attempt is made to illuminate a blue body by a red source it will fail, because the blue body is capable of reflecting only the short waves producing the blue, and since the red source contains none of these there will be no reflection and the body will appear black. In the dark there is no color. We see objects by the light reflected from them. In department stores white goods are often displayed on the same floor as dark woolen goods. In this case, if the intensity of the light is the same throughout the store, the section containing the dark goods will appear poorly lighted as compared to the section containing the white, because black absorbs light, while white reflects it. This absorption of light accounts for the fact that black clothes are warmer in summer than white clothes.

This property of reflecting, or rather absorbing light, is shown in the following table, which gives the percentage of the total incident light that is reflected:

Mirror	95.
White blotting paper	82.
Chrome yellow	62.
Orange	50.
Yellow	40.
Pink	36.
Emerald green	18.
Dark brown	13.
Vermillion	12.
Black paper	0.5
Deep chocolate	0.46
Black velvet	0.4



NIGHT ILLUMINATION OF THE SINGER TOWER,
NEW YORK CITY.

If we attempt to transmit white light through a red glass only the red rays will be transmitted, the others being absorbed by the glass. Instead of getting all the energy of the light we get only that part included in the red ray.

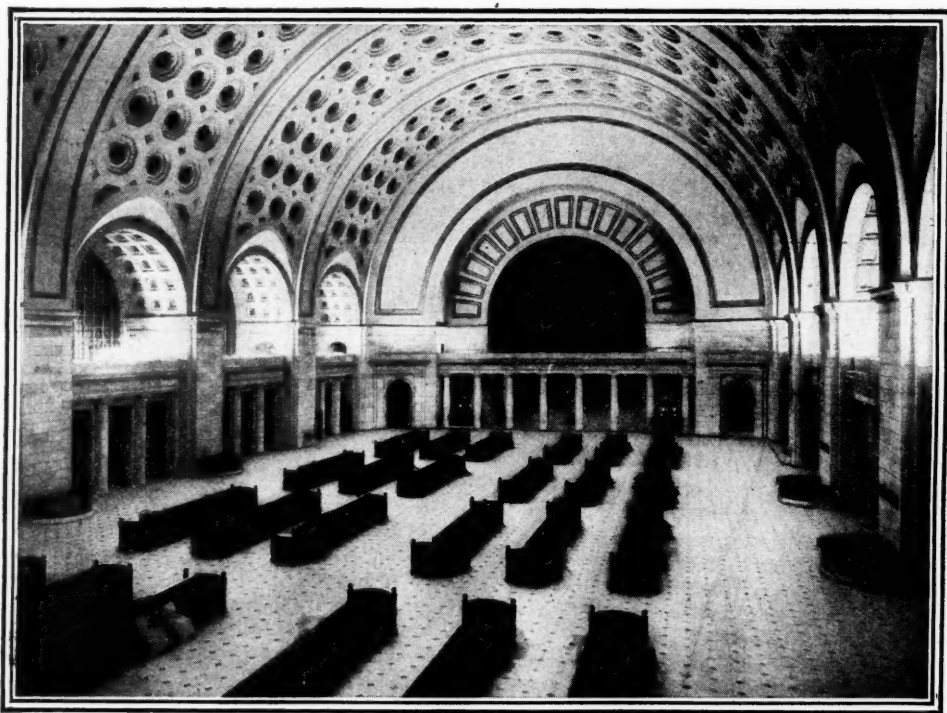
It was formerly the custom to blame the oil, or the gas, or the electricity if there were dark shadows in the room or if the light failed to dispel the evening darkness. Now the illuminating engineer has proved that these same rooms, be it at the home, or the office, or the store, can be made almost as light as day with even less candlepower than before, all with a little study and planning.

A wall-paper which will "absorb" light is the greatest enemy to artificial light in the



NIGHT ILLUMINATION OF THE NEW UNION STATION AT WASHINGTON, D. C.

home. An illuminant is powerless to light a room if the color of the walls absorb most of the rays. The illuminating engineers claim that a white wall will reflect 50 per cent. of light, whereas a red wall-paper will reflect only 15 per cent. A light buff or yellow will reflect 45 per cent.; a dark brown, $12\frac{1}{2}$ per cent.; a light apple-green wall-paper will reflect 40 per cent.; a dark green will give only 15 per cent. Dark wood trimmings absorb light; white wood reflects it. Velvets, chintzes, burlaps, will all absorb light; so will wall-paper, whatever its color, but a tinted surface wall reflects the light. Wall-paper in patterns is not only one of the greatest of all known absorbers of light, but it also has a bad effect on nerves and eyes. Old-fashioned wall-paper in sick-rooms has



INTERIOR OF THE NEW WASHINGTON STATION, SHOWING NIGHT ILLUMINATION.

driven more people delirious than all the diseases combined. The plainer the wall-paper the better for nerves and body, and the smoother the surface the more light it will reflect. In selecting wall-paper the way the room faces must also be taken into consideration. Those rooms facing north and east require lighter colored papers than do rooms facing south and west.

The first duty of the illuminating engineer was to bring about an important change in the practice of placing the lamps. This was very hard to do because the antiquated chandelier had become a habit with architects and builders. It was only after the engineer had repeatedly proved that better illumination could be secured by using several lights distributed about the apartment that this change was brought about. Now, when an engineer is asked to figure on the artificial lighting of a building the first thing he does is to get the dimensions of the rooms and the color of the walls, ceilings, floors, and furniture. Then he ascertains the exact amount of light required for each apartment, and figures out the "wattage" necessary to secure the desired illumination. Once he knows the "wattage" it is easy to figure out the number of lamps required, the candlepower of each lamp, and the proper places to arrange them on the ceiling to get the right effect.

The matter of proper shades and reflectors has also been carefully investigated by the engineer with the result that many of the old types have been thrown on the junk heap and new and better ones devised on scientific lines. These new reflectors concentrate, diffuse or focus the light to meet the demands of the lighting specifications, utilizing the new illuminants to the best advantage.

ACHIEVEMENTS OF ILLUMINATING ENGINEERING.

One of the greatest feats of illuminating engineering was the night illumination of Niagara Falls during the summer of 1907. To successfully illuminate this mighty torrent a battery of nearly fifty large searchlights, several of them the largest of their kind and capable of throwing a beam of white light 125 miles, was located below the falls. Some of these searchlights were placed at the water's edge opposite Goat Island and others on the cliff, both on the Canadian side. This arrangement permitted the illumination of both the Canadian and American falls and threw a plunging light on the falling water and flying mist. The light from the battery

of searchlights, when thrown into the sky, could be seen as far away as Toronto and Rochester.

The tower of the Singer Building in New York is another triumph of the new illuminating engineer. This tower is also illuminated nightly by powerful searchlights.

Among the greatest achievements of the new profession was the illuminating of the great expositions. While the Pan-American Exposition at Buffalo was undoubtedly the best example of scenic lighting, the Seattle exposition is a close second.

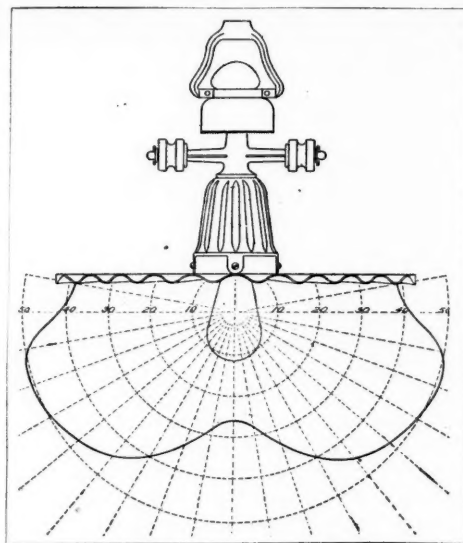
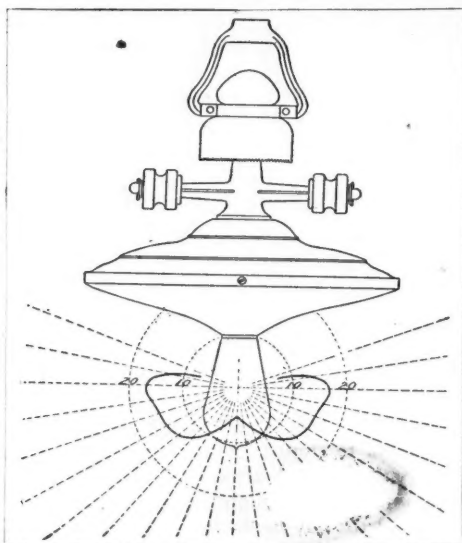
In a certain rifle factory every method was tried for artificially lighting the rifle range, but without success. As soon as the sun began to sink into the West the testing of the rifles had to stop. An illuminating engineer was sent diffusing, after carefully measuring the amount of light on the target at all hours of the day, he devised a special arrangement of the lighting source which worked so well that the marksmen pulled down the curtains by day, preferring to shoot under the artificial light rather than the light from the sun, which varied every time a cloud passed over its surface.

The artificial illumination of the new union station at Washington, D. C., is perhaps the finest example of the illuminating engineer's work in the country. This station, which is the largest and best in the world, is lighted indirectly by electricity after the most scientific and approved methods. It was only a few weeks ago that a man and his wife from Milwaukee had occasion to spend several hours in this station waiting for a train. The husband was an official in an illuminating company and had made more or less a study of lighting. After a time the wife went out on the street and did not return for some little time. "I'm glad to get back safely, John," said she, "for it's so awfully dark outside."

"Dark? Why, no, it isn't dark yet. It's as light as can be," answered the husband.

Nor would the husband believe it was dark until he went outdoors himself and looked. Much to his surprise it was as dark as pitch out of doors, yet the illumination of the station's interior, to all appearance, had not changed at all in the transition from day to night.

The illumination of this station is ideal from the engineering point of view. Artificial illumination, to be correct, should diffuse the light in exactly the same proportion as actual daylight, and the light source



OLD AND NEW ELECTRIC LIGHTING SYSTEMS COMPARED.

(Characteristic distribution of light from 50-watt carbon filament street series lamp, equipped with old type reflector.)

(Characteristic distribution of light from 50-watt series Tungsten lamp, equipped with radial wave reflector.)

should approach the exact color of sunlight as nearly as possible.

"The light is good," declared the owner of a large department store to the illuminating engineer, "but there is a strong odor every time we light up."

"The trouble is that the architect did not figure on enough ventilation for the store when it is lighted by artificial means," answered the engineer. "Your lights produce an enormous amount of heat and give off obnoxious gases, which would be removed by proper ventilation."

The ventilators were enlarged and the trouble ceased.

A manufacturing firm which employs the very best of skilled workmen found that the men were complaining of eye troubles. As nearly 99 per cent. of the work in the shops is accomplished through the aid of vision the illuminating engineer was hurriedly summoned to correct the trouble. He found that the lighting system used during the late afternoon and evening was too rich in the red and violet rays of the spectrum, which are irritating to the eye. When this was corrected with suitable shades the trouble ceased at once.

In another factory a flickering light prevented good workmanship, and in a large public hall the points of greatest brilliancy

came directly into the field of vision, not only hurting the eyes but tiring every one who sat there for any length of time.

Another illuminating engineer corrected the daylight illumination of a costly home, when he had been summoned to suggest the changing of windows for this very purpose, by ordering the light-colored wall-paper in the bright, sunny rooms to be replaced with a dark green; and replacing the paper of the darker rooms with a light buff and tinting the ceilings.

The first work of the illuminating engineer was to correct the light sources which are injurious to the human eye. Naturally the illumination of the large public buildings claimed his attention first and he set about to correct these defects. The lighting methods of libraries and school buildings were found to be radically wrong and dangerous to old and young. The eyes of children are as delicate and sensitive to overwork and strain as their bodies, and to compel children to do eye work by insufficiently or badly directed light is an injustice and cruelty equal to compelling them to bear burdens and labors beyond their bodily strength.

The eye carries more information to the brain than all other sources combined, and with the wonderful speed of light this intelligence is almost instantaneous. Notwith-

standing that the sense of sight is the most valuable possession of the human body, it is, unfortunately, given the least attention. In most cases the eyes are never examined until continuous headaches warn the victims of ocular trouble or actual blindness takes place.

Ideal illumination reflects just enough light from the object to the eye so that it can be seen easily and clearly. Too much light must be avoided, for the iris, or shutter, of the eye can contract and shade the eye only a certain amount, and it is soon tired by such tense contraction. The iris expands when it tires and weakens, allowing the strong light to enter the eye. A strong light striking full on the retina of the eye is very detrimental. Flickering lights are hard on the eyes, as the iris has to be continually readjusting itself; streaked light is also bad, as the retina is unable to adjust itself to streaks of different intensity.

A few years ago the London School Board examined nearly 400,000 school children, of whom 25 per cent. were found to have defective eyesight, while 230 pupils could not read the test type at all. The eye of a child is shallower and the lens more convex than that of an adult, so that the illuminating engineer is confronted by an entirely different problem when planning the illumination of a school room, library or nursery. School work, reading and writing are necessarily tiresome to the eyes, and the very best of illumination must be secured if the eyes of the children are to be preserved.

Our general health depends a great deal on the perfection of the lighting systems in our homes, offices, and factories. Where lights are suspended low the flame or filament is hidden by opal or ground glass so it cannot hurt the eyes. Gas and oil lamps vitiate the air, burn up the vital oxygen, and give off poisonous gases unless the building wherein they are used is specially well ventilated. Such poorly planned lighting systems are a daily menace to bodily health. All lamps that burn with an open flame fill the air with tiny particles of black soot, which coat the nostrils and bronchial tubes; these particles also settle on the furniture, curtains, walls, and ceilings, making it necessary to periodically refinish and refurnish the rooms.

By far the largest percentage of headaches can be traced directly to the eyes and from the eyes to a poor system of lighting, whether by ill devised windows or poorly arranged lamps. A strong light shining into the eyes,

the glare of reflected light from a book, desk, or paper; streaked light, not enough light, too much light, and a number of other defects in the lighting arrangement cause headaches.

There are two ways to light large rooms, either by direct or indirect lighting. With indirect lighting all the light is thrown to the ceiling and walls and thence reflected to the lower portions of the room, giving a soft, mellow light, without any sharp points to blind the eyes. With direct lighting opaque shades placed directly above the lamps reflect all the light downward. Direct lighting is the most common and the cheapest way, but it does not distribute the light evenly, casts heavy shadows, and leaves the bright points of light free to shine directly into the eyes. By using diffusing shades and ground glass globes this trouble can be avoided.

The lighting of show windows has called for all the originality and imagination of the illuminating engineer. Because of the small space, high ceilings, plate glass, and mirrors this was a very difficult proposition, but the results have been most satisfactory. A well-lighted show window is a valuable adjunct to the advertising of all kinds of merchandise, and in this branch of the work the engineer has saved the shopkeepers thousands of dollars.

ABOUT THE EYES.

The human eye has passed through thousands of years of evolution until it has become best adapted to sunlight, or skylight coming obliquely from above, and resents strong illumination from any other direction. It is apparent that snow blindness, distress from white sand or water is not caused by the intensity of the light so much as by the fact that it is reflected up instead of down and is not stopped by the rather transparent lower eyelid. If the lower part of the eye is guarded with goggles or by blacking the lower lid no difficulty is found. The eye is provided with a wonderful automatic "iris diaphragm" for its adjustment to various degrees of illumination. This diaphragm, while very prompt in its action, is by no means instantaneous, and if one comes suddenly out of the dark into brilliant light the effect will be blinding, with countless after-images floating before the vision. These after-images are caused by retinal fatigue. The iris adjusts itself to cope with the brightest light it has to encounter. This accounts for one's inability to see beyond a brilliant light, such

as a low hanging arc light or an automobile lamp during the night.

But light without shadows is objectionable because the eye has grown used to shadows and requires them. Shadows enable us to see the shapes of objects. On certain days when the earth is veiled by a thin fog which hides the sun while diffusing light with great brilliancy there is a painful glare which the eyes cannot endure without serious strain. This is due to the fact that the light seems to come from everywhere, eliminating all shadows.

"Is it injurious to read in bed?" was asked an illuminating engineer the other day.

"Lie in bed and read all you want to," said he with a laugh, "providing you have a good and sufficient light and that it comes from the right direction. The bad effects resulting from the habit of reading while lying down are generally the result of facing the source of light. Let the light come obliquely from above and behind the book and no harm will result unless you read all night and overtax your eyes."

Gazing at a brilliant light will tire one in a few seconds. The drowsiness which steals over us in church or public hall is not always due to the speaker or to our own toil-worn condition. Quite as likely it is due to an unconscious straining of the eyes caused by an exposed light in our field of vision.

Visual memory is a phrase much used by illuminating engineers. It is visual memory which makes us believe that the lightning is a single flash of brilliant light, when the camera shows us that it is a series of flashes. If we swing a lighted stick in a circle fast enough it will look like a complete circle of fire. This is because the light coming from the moving flame is focused on the retina, the reflection persisting for a fraction of a second; thus sight and memory continue until the flame has made a complete circle. In the retina there are a million or so of nerve fibers, all of these taken together making up the optic nerve, but all these fibers have other ends somewhere in the brain, and the impressions brought to the brain by these fibers endure for a very short time, just as a piece of metal keeps hot after it has been taken out of the fire.

THE TOOLS OF THE TRADE.

The terms used by the illuminating engineer are easily understood. Candlepower, as its name implies, means the intensity of light given by a single sperm candle. The

term "foot-candle" is the intensity of illumination a single candle gives on a screen one foot from the flame.

The luximeter, the latest instrument to be devised by the illuminating engineer, is a portable device to measure the illumination on any surface.

The luminometer, or type reading photometer, is used for measuring the lighting distance or illuminating value of street lamps.

The spectroscope and spectrophotometer enable us to analyze a beam of light and measure the colors. With the spectrometer the scientist can tell from a ray of light whether a star is moving towards the earth or away from it, and how fast.

There are also a large variety of photometers for measuring the candlepower of different sources of light.

PROGRESS IN PUBLIC LIGHTING.

Not two hundred years ago Broadway, New York, after nightfall was almost pitch dark and infested with rogues and thieves. It was not safe to travel it by night without armed guards and boys carrying torches. To-day this great thoroughfare is famous as the "Great White Way," because of the brilliancy of its night illumination.

Less than a hundred years ago street lighting was opposed by the very best men of that day on theological grounds as being a presumptuous thwarting of the intentions of Providence, which had appointed darkness for the hours of night. It was opposed on medical grounds, as gas and oil were declared unwholesome, and they argued that it was a bad thing to encourage people to stay outdoors nights and catch colds, pneumonia, and fevers. On moral, philosophic grounds it was held that the people's moral standard would be lowered by street lighting, as the drunkard would feel there was no hurry to get home, and late sweethearting would be encouraged, whereas black night sent people home early, thus preserving them from a multitude of sins. They also argued that lights would make thieves alert and that national illuminations would lose their effect if there were street lighting every night.

Seventy-five years ago streets were being lighted with oil and gas. Twenty-five years ago the electric lights were introduced and the systematic lighting of streets began; now there is scarcely a hamlet so small it cannot boast of lighted streets. And the men who are studying the subject say that the dawn of artificial light is just breaking.

THE PAYNE-ALDRICH TARIFF.

[The following analysis of the new tariff law was prepared by an expert authority. All the statements have been verified by reference to official documents. It is proper to state, however, that in the case of some of the more complicated schedules (cotton, for example), in which new classifications have been introduced, it is impossible to say just what the revised imposts will be on particular classes of goods. There are, indeed, wide differences of opinion among Government officials as to the ultimate effect of some provisions in these schedules. For instance, it is contended by some of the appraisers that the new cotton schedule will affect only high-grade cottons, while the Chief of the Division of Customs of the Treasury Department is authority for the interpretation adopted in this article.—THE EDITOR.]

THE tariff bill which became a law by President Taft's signature on August 5 makes hundreds of changes in the customs schedules and affects thousands of commodities. No general conclusion regarding the merits or demerits of the new law can be reached without a careful analysis of the measure in its various details.

According to the official estimates of the Senate Committee on Finance, the average rate of duty under the new tariff is 1.1 per cent. higher than the average Dingley rate, the figures being based on the values of imports during the fiscal year 1907.

The average increase of 1.1 per cent. is the net resultant of numerous changes, both upward and downward, occurring in the different schedules of the tariff. Not all of these schedules have an equal interest to the general public. From the point of view of the "ultimate consumer," a phrase which gained prominent currency during the great tariff debates, a reduction of duty on the things he eats and wears is of far greater importance to him personally than an equal reduction on chemicals or machinery. The reductions of the latter class may or may not benefit him ultimately. The outcome would depend on a number of conditions, such as the duties on the finished products, presence or absence of domestic competition, etc. It is well, therefore, to consider first of all the textile schedules and then analyze the rest in the order given in the law.

THE COTTON SCHEDULE.

Of the four textile schedules, cotton, wool, flax, and silk, the first is the one of paramount importance, affecting an article used by every man, woman, and child from the richest to the poorest. Though made of a raw material of which we produce the bulk of the world's supply and the manufacture of which in this country,—in the staple lines, at least,—is as cheap as, if not cheaper than,

in any of the important competing countries, the schedule carried duties under the Dingley law from 10 per cent. to 48 per cent. on thread and yarn, as high as 77 per cent. on cotton cloth (the average rate on all cotton cloth being estimated by the Bureau of Statistics at 38 per cent.), and similar rates on other cotton goods.

During the interval of twelve years in which the Dingley tariff was in force our cotton industry made gigantic progress. Leading mills have been declaring dividends as high as 66 per cent. and more, setting the pace for domestic prices whose upward trend knew but one limit,—the height of the tariff wall beyond which foreign competition was made impossible.

Until the very close of the tariff debate in Congress, Senators Aldrich and Smoot, on whose shoulders rested the weight of responsibility for the intricate changes in the cotton schedule, stoutly maintained that there had been no substantial change in the cotton schedule. The Senate Finance Committee's own compilation shows an increase from the average Dingley rate of 44.84 per cent. to 50.62 per cent. under the new tariff, or an increase of nearly 13 per cent. However, if that figure measured the sum and substance of the changes in the cotton schedule it would not have precipitated the fierce onslaught of the insurgent Republicans, led in the Senate by La Follette and Dolliver. The fight centered about the changes in classification, which will result in raising duties as much as 100 per cent., and in some cases more, above the rates of the Dingley tariff. The changes are too technical to be explained here at length. Suffice it to say that they are of a kind not to be easily discovered, requiring painstaking study of the new law and minute comparison with the old.

One of the provisions, which has caused much discussion, may be briefly explained for

the purpose of illustration. Under the Dingley tariff cotton cloth was subject to the same duty whether mercerized or not. The new tariff provides (in par. 323) for an additional duty of 1 cent a square yard on cotton cloth "mercerized or subjected to any similar process." In paragraph 320 the definition of mercerized cloth is given as one "which has any . . . mercerized . . . threads in or upon any part of the fabric." This will make any cloth having two or more glossy threads in the fabric subject to the additional rate as "cloth mercerized or subjected to any similar process." When the character of this unique definition of cotton cloth was subjected to criticism in the House it was withdrawn by Mr. Payne on his own motion. It reappeared, however, in the Senate bill. In the Senate it again failed to find open support, for no sooner had it been exposed to criticism than it was withdrawn by Mr. Aldrich. Nevertheless it reappeared in the bill as reported from the conference and now forms part of the law of the land.

This provision, which will result in increases of duty as high as 100 per cent., does not, of course, exhaust the changes made. By changing the classification of cotton cloth and substituting specific for ad valorem duties various grades of cotton cloth are made to pay higher rates, while nominally the duties may appear to be the same. The advances will affect practically every variety of cotton cloth, the increases ranging from as little as 5 per cent. for the finest cloth to 100 per cent. and more for the poorer grades, as is shown in detail in a table prepared by the Department of Commerce and Labor and published in Senate Document No. 155, and by the tables prepared under the direction of C. P. Montgomery, chief of the Division of Customs, Treasury Department, and published in the *Congressional Record* of August 6, page 5241.

Another item in the cotton schedule which received much popular attention is hosiery. The conferees modified the advances passed by the House by leaving the following increases of duty on the lower priced hosiery in the act as it finally passed: Hosiery valued wholesale at not more than \$1.00 per dozen pairs, 88 per cent. ad valorem, as against 67 per cent. under the Dingley tariff; valued at \$1.00 to \$1.50, 77 per cent., as against the Dingley rate of 58 per cent.; valued at \$1.50 to \$2.00, 62 per cent., as against 51 per cent. under the Dingley law. The duty

on the highest priced hosiery, valued at more than \$5.00 per dozen, remains unchanged at 55 per cent. ad valorem.

WOOL AND MANUFACTURES OF WOOL.

Next in importance to cotton, if not fully as important, is wool. It is the schedule that formed the subject of even more severe criticism in Congress than cotton. The criticism is based on the discrimination against the carded woolen industry, which produces the poor man's cloth, in favor of the worsted manufacturers, due to the imposition of a uniform duty of 11 cents a pound on raw unwashed wool, which taxes the cheaper wools as high as 500 per cent. and more, while frequently amounting to less than 25 per cent. on the finer grades used for the more expensive cloths.

Based on this system of duties on raw wool is a graded scale of duties on woolen cloth, which allows the manufacturer of cloth composed largely of cotton and shoddy the same "compensatory" duty on a theoretical quantity of wool which is supposed to go into the cloth, as it does on cloth made of "all wool." The result is the imposition of duties frequently ranging from 100 per cent. to 200 per cent. on woolen cloth, blankets, etc., which rise in an inverse ratio to the value of the goods. This discrimination in favor of the worsted industry of New England at the expense of the carded woolen mills of the rest of the country is charged by the latter to have been instrumental in building up a woolen trust dominating prices at home and destroying the smaller mills, whose owners have not the necessary capital to go into the worsted industry and are thus driven out of business. The schedule has been left practically unchanged, save for a reduction of duty of about 5 per cent. on some grades of women's and children's dress goods, which, on the basis of the 1907 prices, is reduced from 115½ per cent. to 109¾ per cent. ad valorem and from 92.6 per cent. to 88 per cent. ad valorem respectively.

SILK.

The silk schedule has been even more radically changed than the cotton schedule, but no accurate estimate of the average change is possible. The increases on the individual items run all the way up to 70 per cent. The official estimates of the Finance Committee show an average increase of less than 1 per cent. for the entire schedule, viz., from 52.33 per cent. under the Dingley tar-

iff to 52.67 under the new, but as they take no account of the changes in duties caused by the changes in classification, they are of little value. However, the average increase on silks will be far below that on cottons.

FLAX, HEMP, JUTE, AND MANUFACTURES THEREOF.

According to the official estimate, the average rate for this schedule has been but slightly increased,—from 40.5 per cent. under the Dingley tariff to 40.9 per cent. under the new. The schedule contains a number of reductions on yarns, nets, matings, etc.; while among the increases are those on certain varieties of linoleum and oilcloth amounting to from 50 to 100 per cent., and on laces, embroideries, and similar trimmings of certain makes, raised from 60 per cent. under the Dingley law to 70 per cent. under the new tariff. As neither of these increases appears in the official estimates, and the increase on linoleum and oilcloth is made to appear as a reduction instead, the general average given above is underestimated.

CHEMICALS AND EARTHENWARE.

In the chemical schedule (Schedule A) duties have been reduced on 12 per cent. of the imports in that class, the reduction amounting to 79 per cent. below the Dingley rate; and raised on 12 per cent., the increase amounting to 44 per cent. over the Dingley rates, while 76 per cent. of the total imports under that schedule will continue to come in under the old rates. The sum total of the changes represents a reduction of $4\frac{1}{2}$ per cent. Most of the articles under that schedule are not used directly by the consumer.

Schedule B includes earthenware, glass, and glassware, etc. Here the reductions affect 7.2 per cent. of the total imports under that schedule to the extent of 23 per cent. below the Dingley rates; the increases cover 4.25 per cent. of the total, the increase being nearly 28 per cent. above those rates, and 88.5 per cent. of the total are left subject to the old rates. With the exception of a reduction amounting on the average to less than 5 per cent. on common window glass, on which the duties ranged from 41 to 87 per cent. under the Dingley tariff, there are no reductions in this schedule that are of interest to the general public. On the other hand, while the rates on crockery and chinaware are left nominally unchanged at 55

and 60 per cent. ad valorem, there is a possibility of a considerable increase of duties on these goods, especially the finer grades, under the new provision for estimating market value in certain cases on the basis of domestic prices instead of those in foreign markets.

REDUCTIONS IN THE METALS SCHEDULE.

Schedule C, embracing all metals and their manufactures, has attracted more general attention than any other of the schedules, which have but an indirect bearing on the household budget of the consumer. Covering as it does an industry in which the United States leads the world, dominated by the largest aggregation of industrial capital the world has yet witnessed, and having been the subject of more convincing testimony from insiders, like Mr. Carnegie, as to absence of danger of injurious competition from abroad than any other part of the tariff, the schedule has undergone a more thorough revision downward than any other. Many of the reductions amount to 50 per cent. Some rates have been reduced still more, as, for instance, iron ore, from 40 cents to 15 cents per ton.

Nevertheless it is claimed by critics of the new tariff that the reduced rates remain far above what is necessary to insure a fair profit to the steel industry, and it is confidently predicted that with the new duty of \$3.92 per ton foreign steel rails will be as effectually shut out from our market as they were under the Dingley rate of \$7.84, under which our importations in 1907 amounted to \$106,000 worth. The significance of this figure will be readily appreciated when it is added that during the same year we exported \$8,384,000 worth of rails to foreign countries, where we not only had no protection, but in some cases had to overcome, in addition to the cost of transportation, the duties imposed for the protection of our foreign rivals.

According to the official estimates of the Senate Committee on Finance, the average reduction of duty is equal to $2\frac{1}{2}$ per cent. from the Dingley rates on the entire metal schedule. This estimate, however, overlooks, in some cases entirely, in others largely, increases of duty which are not readily apparent, among which the following are specific instances: On punched, structural iron and steel, from \$10 a ton under the Dingley tariff to about \$18 and more under the new law; increases of duty on

razors ranging from 21 to 229 per cent.; on nickel and its alloys, of about 133 per cent.; on metallic pens "with nib and barrel in one piece," amounting to 25 per cent.; on bottle caps and on lacquered cans, boxes, 22 per cent. and more.

In so far as these increases are due to changes in classification, they are not noted in the estimates of the Senate committee at all, or they are so palpably underestimated as to reduce greatly the practical utility of the committee's computation. As the change in classification is characteristic of changes made in other schedules of the tariff, including those of cotton and silk, to which reference has been made, it will be useful to describe one as an illustration:

The duty on structural steel, "whether plain or punched, or fitted for use," was \$10 a ton under the Dingley tariff. The House, without changing the wording of the paragraph, reduced the rate to \$6. When the bill reached the Senate the Committee on Finance struck out the words just quoted, substituting the words "not assembled, or manufactured, or advanced beyond hammering, rolling, or casting," fixing the rates for these at \$6 and \$8 a ton, according to the value of the iron, but leaving no provision for the punched shapes, which is the only way in which the bulk of structural iron is sold for practical purposes. This will bring the punched structural iron under paragraph 199, which provides for a duty of 45 per cent. on all manufactures of metal not specifically mentioned. At the price of \$30 to \$40 per ton the duty on the material will amount to from \$13.50 to \$18 per ton, an increase of from 35 per cent. to 80 per cent. over the Dingley rates. Yet, as this increase is not specifically mentioned in the tariff, it does not appear in the computation of the Senate Committee on Finance, which instead shows a reduction of duty for structural iron from 36.75 per cent. under the Dingley tariff to 29.40 per cent. under the new law.

WOOD AND ITS MANUFACTURES.

In a similar manner, the official estimate shows a reduction of duties on lumber and its products (Schedule D) of more than 14 per cent., but it takes no account of changes in classification deftly wrought into the fabric of the new tariff law. Thus the Dingley law provided for a duty of 1 cent per cubic foot on "timber, hewn, sided, or squared." Mr. Payne, while reducing the

rate to one-half of 1 cent, allowed the lumbermen on his committee to modify the definition so as to read "timber, hewn, sided, or squared *otherwise than by sawing*." As sawing has now taken the place of hewing in the lumber industry, the innocent looking addition has virtually taken all the squared timber out of that class and thus placed it constructively under "boards," which will result in an increase of 50 per cent. over the Dingley rates. Yet in the official compilation it appears as a reduction of 50 per cent., which is nominally true (so far as the abstract figure is concerned), but actually false (in so far as the application of the law is concerned). An apparent increase in the schedule is that on shingles, on which the duty has been raised from 30 cents a thousand under the Dingley law to 50 cents, or 66 2-3 per cent. In 1907 we imported less than \$2,000,000 worth of shingles, which was not far from 5 per cent. of our domestic production.

SUGAR AND TOBACCO.

The duty on refined sugar has been reduced from \$1.95 per 100 pounds to \$1.90, or 2½ per cent. When it is considered that since the enactment of the Dingley tariff in 1897 we reduced the duty on raw sugar coming from Cuba 20 per cent., that annexation placed raw sugar of Hawaii * and Porto Rico on the free list, and that the new tariff provides for the free admission of sugar from the Philippine Islands to the extent of 300,000 tons per annum, or about three-fourths the quantity we import from the Hawaiian Islands to-day, it is difficult to escape the conclusion that the attempt on the part of the insurgent Republicans to bring the reductions on refined sugar in consonance with the 20 per cent. reduction on the raw material of the sugar trust deserved greater success.

The tobacco schedule has been left practically unchanged so far as the tariff is concerned. The partial increases in rates brought about through the efforts of Senator Beveridge with a view to compelling the tobacco trust to bear a share of the burden of the tobacco excise apply to internal taxes.

* Prior to the annexation, sugar from Hawaii was admitted free of duty under the reciprocity treaty; but in the absence of definite assurance that the free admission of sugar might not be stopped with a change of policy in the United States the production of sugar was not as large as it is to-day. The importation of sugar into the United States from Hawaiian Islands has increased from 520,532.192 pounds in 1897, the year preceding annexation, to 821,014,811 pounds in 1907.

AGRICULTURAL PRODUCTS.

According to the "estimated revenues" of the Finance Committee, the average rate under the agricultural schedule represents an increase of nearly 6.5 per cent. It may be interesting to note that we are the only great agricultural nation in the world that levies a duty on cereals. While producing four times as much corn as all the rest of the world, we have a duty on that cereal, although our imports of corn were worth less than \$8000 in 1907, as against exports exceeding \$44,000,000 in value. As a source of revenue these duties are worthless; as a means of protection they are useless; as a sop to the farmer they may be worth a great deal to those who need the agricultural votes for extreme protection on goods which the farmer consumes. It is startling, but nevertheless true, that cereals, meats, and similar products of which we export immense quantities to the dismay of the agrarians in Germany and other countries, are subject in this country to rates nearly as high and in some cases higher than in Germany. But in Germany the people are up in arms on account of it, while here the man in the street is hardly aware of the fact. This is due to the fact that the rates have so far remained on paper, without affecting the prices of food-stuffs which we raise in abundance.

These rates were raised by the Senate Committee, the increases ranging from 20 to 100 per cent. on cereals like wheat, corn, rye, etc. The increases were abandoned in conference in return for increased rates of duty on lemons (50 per cent.), grapes (25 per cent.), pineapples, dates, cornmeal, buckwheat flour, plants and vines, etc. Among the more important reductions in this schedule are those on meats, lard, and starch, the reductions averaging 25 per cent. from the Dingley rates. The least justifiable increase is that on biscuits and other products of the cracker trust, which enhance the Dingley rates from 75 to 150 per cent. As the total importation of bread and biscuits amounted to \$252,000 in 1907, against exports of over \$2,638,000 in the same year, the pertinent question was raised in the Senate as to the object and justification for this increase.

SPIRITS, WINES, AND OTHER BEVERAGES.

This schedule (H) has been revised upward for revenue purposes. The duty on spirits and brandies has been raised from \$2.25 to \$2.60 per proof gallon. The duty

on champagnes, which was \$6 per dozen quart bottles under the minimum Dingley rate and \$8 under the maximum, has been raised to \$9.60 as a minimum and \$9.60 + 25 per cent. ad valorem as a new maximum. Similar increases will affect other alcoholic beverages.

PULP AND PAPER.

The question of wood pulp and paper (Schedule M) formed one of the prominent points of attack on the Dingley tariff in the campaign for its revision. The select committee of the House, headed by Congressman Mann, of Illinois, a staunch protectionist, gave the entire subject eight months of thorough study, and personally inspected the leading paper mills in this country and Canada. The committee established the fact that the labor cost of the manufacture of paper is lower in the United States than in Canada. It recommended the placing of wood pulp on the free list and the reduction of the Dingley duty on paper from \$6 to \$2 per ton. The House adopted the recommendation of the committee. The Senate raised the duty to \$4. The conference compromised on \$3.75. Both the free admission of pulp and the reduction of duty on paper are conditioned on the absence of export duties on the raw material or export bounties on the finished products by Canadian provinces. They are also conditioned upon the existence of "most-favored-nation" relations with our neighbor to the north, after April, 1910, which is not the case to-day.

As against these contingent reductions of duty on print paper, there are unconditional increases of duty on writing paper, which affect the reductions to an extent sufficient to raise the general average of the paper schedules, according to the estimates of the Finance Committee, by nearly 5 per cent. This does not take into account, however, increases of duty hidden in changes of classification, such as on lithographic prints of all kinds, ranging from 6 per cent. to 90 per cent. above the Dingley rates, press paper and wrapping paper 40 per cent., etc.

SUNDRIES, LEATHER, COAL, ETC.

This schedule (N) covers a great variety of products, the most important group being hides, leather, and leather goods, which attracted so much popular attention owing to the part the President took in forcing the removal of duty on the raw material. Of all manufactured products, shoes and shoe

leather are subject to the lowest rates of duty under the new tariff, the rates on sole leather being as low as 5 per cent; on uppers, $7\frac{1}{2}$ per cent.; on shoes, 10 per cent. All other manufactures of leather not specially mentioned are subject, however, to 40 per cent., which is an increase of 14 per cent. over the Dingley rates, in spite of the removal of the 15 per cent. duty on hides; while on gloves the rates are as high as 81 per cent. and more, being absolutely prohibitive on many grades.

Another important reduction of duty is that on coal, from 67 cents a ton to 45 cents. The House provision for reciprocal free trade in coal, which would have been an important card in our hands in negotiations of a reciprocal trade agreement with Canada, was stricken out in the Senate.

The duty on agricultural machines and implements, such as plows, mowers, thrashers, reapers, etc., has been reduced from 20 per cent. to 15 per cent., and a proviso has been added for the free admission of these machines from countries reciprocating in kind. This will at once give an advantage to England as against other countries, unless the latter put the same articles on the free list. In view of the recognized superiority of our makes, however, the provision is not likely to prove of much practical importance, with the possible exception of Canada, if the latter chooses to accept the condition.

The duties on hats and bonnets valued wholesale at not more than \$4 per dozen have been reduced from an average of 97 per cent. ad valorem under the Dingley tariff to 78 per cent.

Among the increases of duty in this schedule due to changes in classification the most important are on manufactures of furs, which are raised from 43 to 75 per cent. above the Dingley rates of 35 per cent. ad valorem; on fire arms, on which rates have been increased 50 per cent. above the old tariff; on fabrics of asbestos the increase being 60 per cent.

The duties on feathers and downs are raised from 15 per cent. under the Dingley tariff to 20 per cent. under the new, and ornamental feathers from 50 per cent. under the Dingley rates to 60 per cent. The duties on manufactures of straw have been increased from 30 per cent. under the old tariff to 35 per cent. The same is true of the duties on manufactures of horn and india rubber.

The official estimate shows an average in-

crease of 6.26 per cent. for this schedule over the Dingley rates.

SUMMARY.

Summing up the changes made in the tariff as shown in the various Senate documents, the new act has increased the Dingley rates in 300 instances, while reducing them in 584 cases. The increases affect commodities imported in 1907 to the value of at least \$105,844,201, while the reductions affect not more than \$132,141,074 worth of imports. Four hundred and forty-seven million dollars' worth of imports (on the basis of 1907) remain subject to the same duties as under the Dingley tariff. That is to say, 65 per cent. of the total imports remain subject to the old rates, more than 15 per cent. of the total will be subject to higher duties, the average increase amounting to 31 per cent. over the Dingley rates; and less than 20 per cent. of the imports are to be subject to lower duties, the reduction being estimated about 23 per cent. below the Dingley rates. All of these figures greatly underestimate the increases of duty for the following reasons: First, they do not take into account the numerous changes (nearly all increases of duty) due to changes in classification, similar to the instances cited in the case of sawn wood, structural iron, and cotton cloth; second, a large part of the imports subject to ad valorem duties will now be assessed on the basis of domestic prices instead of the prices in foreign markets (with due allowance for freight and duty), as has hitherto been the case; and, finally, the possibility, even if remote, of the application of maximum rates to imports from some of the foreign countries, which will amount on the average to an increase of more than 50 per cent. over the new rates. The real increase of duty will not be accurately known for a year, until we have full returns of the imports and duties actually levied under the new law under the decisions of the Board of General Appraisers and the new Customs Court.

THE MAXIMUM AND MINIMUM PROVISION.

The agitation which led to the revision of the tariff was to a large extent due to a widespread desire for reciprocity with foreign countries. The Dingley tariff gave the Executive two ways for negotiating reciprocal treaties. One (Section 3) authorized concessions of from 20 per cent. to 25 per cent. from the established rates on argols, wines,

brandies, paintings, and statuary; the other (Section 4) authorized concessions not to exceed 20 per cent. from the entire tariff list. The former set of concessions could be granted by the Executive without reference to Congress and led to the conclusion of highly profitable trade agreements with the leading European nations, which are still in force, but whose abrogation has now become mandatory. The other led to the negotiation of treaties which failed of ratification by the Senate and therefore never went into effect.

The new tariff raises the minimum rates of Section 3 of the Dingley act far above the old maximum, the increase being from \$6 to \$9.60, or 60 per cent., on sparkling wines; from \$1.75 to \$2.60, or nearly 50 per cent., on brandies, etc., which is a serious change for the worse for countries like France, Italy, Spain, and Portugal, all of which have enjoyed the minimum Dingley rates under the reciprocal agreements.

The large number of reductions scattered through the bill are, as has been pointed out here, more than offset by the increases of duty. The reductions are, as a rule, on articles of which we are not likely to increase our importations, while the increases are calculated to prevent or diminish importations. The new bill thus holds out but few inducements to foreign nations and fails to provide a broad basis for reciprocal treaties upon which to secure concessions for American products in foreign markets. Its strength lies not in the minimum rates as a basis for reciprocity but rather in the maximum as a means of retaliation. The maximum tariff is a flat surtax of 25 per cent. ad valorem on all dutiable goods, which is equivalent on the average to a surtax of over 50 per cent. on the new rates. For any other nation to attempt to secure better trade terms from foreign countries while offering them worse terms than before would mean to invite a tariff war with the rest of the world. With us, our market offers such an attractive field for foreign producers and our abundant resources make us so little dependent on the outside world that we occupy an immensely superior strategic position, which most of the foreign countries will be reluctant to test by tariff hostilities, unless driven to do so by sheer desperation. Nevertheless the possibility and even the probability of a tariff war exists in the case of two countries, France and Canada. Much will depend upon the use made by the

President of his power of discretion in interpreting what constitutes discrimination against American products.

It is significant that the new tariff act in laying down the conditions for the application of the maximum and minimum rates by the President calls not for special concessions to American commerce but for terms as favorable as those granted to other nations. As these have been secured to suit the special wants of the countries concerned, they will benefit us only in cases where we happen to have similar interests, while leaving the special American interests unattended to.

The act provides that the maximum rates are not to go into effect before April 1, 1910. At the same time the Executive is directed to terminate all existing trade agreements. In the case of the French agreement, which does not provide for due notice as to its termination, the act directs its termination on November 1. This will result in the application of the increased rates on French wines, brandies, etc., before they are applied to other countries. The termination of the agreement on our part will, however, result automatically in the application of the maximum French rates to our fruits, canned meats, pork, lard, lumber, Porto Rican coffee, and possibly petroleum, which are from 25 per cent. to 100 per cent. above the minimum rates enjoyed by these products of American origin to-day. Thus, the undue haste to apply our increased rates to France, while the other countries continue to enjoy the reduced Dingley rates, may result in the application of the entire maximum tariff of France to our products, unless the Government succeeds in the difficult task of concluding a new treaty with France before November 1.

The tariff act has failed to provide for maximum rates on articles placed on the free list. By doing so it has deprived the Executive of the only trading cards he might have with countries to the south of us, like Brazil, whose coffee, rubber, and hides, constituting about nine-tenths of her entire trade, will be admitted free of duty to our markets, while it subjects American products to rates so high as to be frequently prohibitive. The provision of a maximum duty on these articles would have given the President the means for obtaining more favorable terms for our commerce in South America, without danger of the actual imposition of those rates to the detriment of the American consumer.

LEADING ARTICLES OF THE MONTH.

THE NEW TAX ON CORPORATIONS.

IN the August issue of the *North American Review* Mr. Charles A. Conant enumerates and annihilates some of the objections raised to the new tax upon the net earnings of corporations. In the opening paragraph of his article he maintains that the critic who calls the tax "socialistic" must "either confess his ignorance of the legislation of the most conservative countries of Europe or must be prepared to contend that they have already been captured by the enemies of society." That there should be an outcry against any measure "which touches the pocket nerve" is, as he says, inevitable; but "those who cry out against a rate of 1 or even 2 per cent. upon corporation earnings, after the deduction of operating cost, depreciation charges, and interest on bonds, may well be set to studying the corporation and income taxes of Europe." As a result of their studies they would discover the following facts:

In Great Britain in 1903 the income tax was 6.15 per cent., and the amount taken from the pockets of the taxpayers was in excess of \$175,000,000. In Prussia even incomes below \$900 pay a small charge, and those above that amount are subject to a progressive rate, which rises to 4 per cent. In Austria the income tax includes a rate of 5 per cent. upon income derived from securities or from industrial and commercial operations. In France business is subjected, apart from many other taxes, to a so-called patent tax, based upon the size of shops and number of employees. . . . The total deduction by taxation from the income of securities in France is estimated by Professor Leroy-Beaulieu at from 9 to 10 per cent. . . . In Russia a still heavier burden was imposed by the law of 1898 upon the profits of stock companies, by fixing a progressive rate, beginning at 3 per cent. where profits were not above 4 per cent. of capital and rising to 6 per cent. upon profits reaching 10 per cent. of capital, with a still heavier charge where profits exceed 10 per cent.

Compared with these figures our new tax is moderate indeed. Reckoning the total share capital of joint-stock companies in the United States at not less than \$25,000,000,000, and net earnings on the same at \$1,500,000,000, a "levy of 1 per cent. will bring into the public treasury \$15,000,000."

The striking absence of denunciation of the new tax "from the ranks of those qualified to express an opinion upon its economic merits" can only be due to the fact that "the principle of the tax is recognized everywhere as economically sound and that it lacks the conspicuous defects of the personal income tax in regard to facility of collection." As Mr. Conant points out, a tax on net earnings is a tax upon capital which has been accumulated. It is not a tax upon capital in the making. A levy upon net incomes is much more equitable than one upon gross earnings. "Gross earnings bear no definite or equitable relation to profits; net earnings are the exact measure of profit and success."

One of the objections raised against the new tax has been that the "widow-and-orphan" stockholders would find their incomes reduced thereby. This objection "falls to the ground with many others before the lightness of the burden which the tax involves." A corporation earning \$1,000,000 above all the charges which the law allows to be deducted "would have just sufficient profits to pay a dividend of 10 per cent. on a capital of \$10,000,000. . . . The tax of \$10,000, at the rate of 1 per cent. on net earnings, would reduce the balance to \$990,000; so that in theory the 'helpless widow' would find her dividend cut from 10 per cent. to 9.9 per cent." Other objections are that the tax will be evaded "by turning stock into bonds, by diverting earnings into increased salaries, and by false returns." Though these devices may occasionally be resorted to, Mr. Conant believes that "it is insulting to the intelligence of the average corporation board to suppose that they will be adopted by any considerable number of them in order to escape a tax of 1 per cent." As to the keeping of fraudulent books and the making of false returns, the risks and difficulties involved would not be compensated by the saving, viewed purely from its practical side.

Probably the most serious objection of all is, as Mr. Conant correctly observes, that

which commends it to the people: this is "the power which is given to the Federal Government to make such investigations as are necessary to determine if the tax has been paid upon actual net earnings." To Americans who resent such "inquisitorial" methods Mr. Conant suggests that they study the corporation laws of Europe in general and those of England in particular:

A corporation in England cannot issue a prospectus which is not signed by every person who is named therein as a director or by his agent. What prospectuses of new companies shall contain is carefully defined. . . . Whenever a company makes an allotment of shares it must file within one month with the public registrar a return of the allotments. . . . If default is made in any of the requirements, every director, manager, secretary, or other officer of the company who is knowingly a party to the default shall be liable to a fine not exceeding £50 for every day during which the default continues.

If Great Britain, the most conservative country in the world and the one in which trade,

apart from other Anglo-Saxon countries, is probably the most unfettered in the world, sees fit to impose restrictions like these upon invitations to the public to subscribe for securities, then at least the mouths should be stopped of those who, in ignorance of the facts, may be disposed to characterize rigid company regulation in the United States as socialistic and without precedent. On the contrary, the United States, if she determines to establish uniform regulation in behalf of the investor and shareholder, in place of the present haphazard and disjointed system of company management, will follow a path of precedent beaten wide and smooth.

The great advantage of a tax on net earnings is "its adaptability to changing conditions." In this respect "it runs on all fours with the English income tax, of which the rate can be changed from year to year, according to the requirements of the budget." The adoption of a tax capable of being varied from year to year in order to meet the condition of the budget will be "in itself a fiscal reform of the first importance to the Federal Government."

THE AERIAL BATTLESHIP—THE END OF WAR?

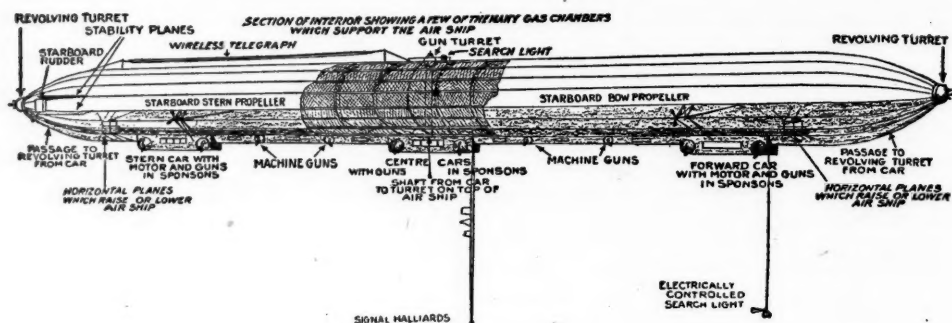
THE public has come to regard the air ship,—dirigible, monoplane, biplane and what not,—as so essentially one of the glorious inventions of peace that somewhat as a shock comes the discovery that the machine is already in process of development into the most deadly engine of war that the world has ever known or even dreamed of. Indeed, the possibilities of its destructiveness seem to be limitless and to threaten the complete revolution of modern warfare, if not,—a consummation devoutly to be wished,—the abolition of war itself. That all this is no mere idle speculation is most forcefully demonstrated by Messrs. Carl Dienstbach and T. R. MacMechen in *McClure's* for August in an article which is the most forceful presentation of the military side of aeronautics that we remember to have met with.

It will, we think, be news to many of the readers of the REVIEW that "in the fall of 1908 the third airship built by Count Ferdinand von Zeppelin was bought by the German Government, officially commissioned as a warship, and given a military crew." Also, that "in secret trials by the German Government during March a rapid-firing gun, capable of throwing nearly sixty 1.9-inch shells a minute, was fired with entire success from the deck of the *Zeppelin I*." This, say the

writers under review, "means the end of armies within the next ten years. The situation about which there is now the densest ignorance should be understood." They proceed to give the following succinct description of the dirigible:

A Zeppelin airship is not a balloon, but a true ship,—exactly corresponding to an iron ocean ship. It has a strong rigid hull; it is sustained by displacing more than its own weight in the fluid that supports it; it will sink only if it leaks badly. Neither the airship nor the iron ocean ship is in the slightest danger of sinking except by grounding or collision. . . . It is protected by a cover of tough rubber-cloth, stretched over aluminum rings and ribs, each strong enough to support a man's weight; and the whole is greatly strengthened by the upward pressure of the hydrogen in its inside balloons. It is fully as strong for its purposes as an iron steamship. The airship is never strained by rolling or pitching, like the steamer, because the air acts upon it as a current and not as waves.

The strength and stability of these airships are now demonstrated facts. Ascents have been made in snowstorms and in a blizzard; "and the huge craft, the size of Atlantic liners, have all this time been landing on the ground, without special wharves. A captain attempting the similar feat of landing a great steamship upon a shore without wharves would be considered insane." Of



THE AERIAL BATTLESHIP.

the speed and economy of the new aerial "liner" we read:

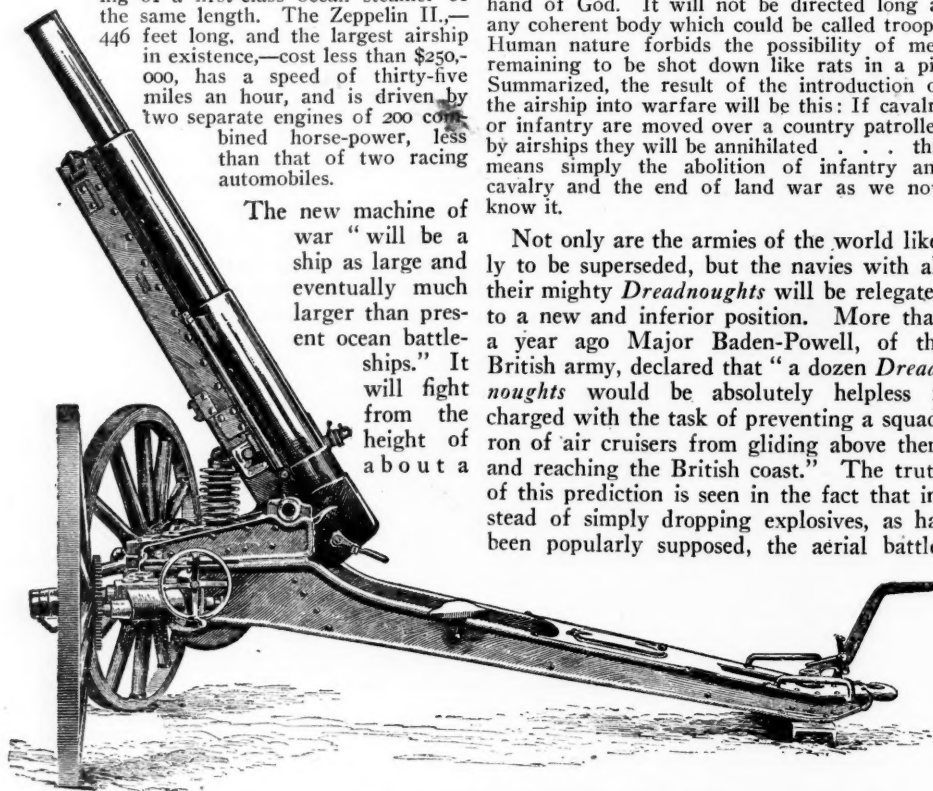
Water being eight hundred times heavier than air, airships will never compete with steamships as freight carriers. For exactly the same reason they will develop double or triple the speed of the ship in the water; they will do this driven by engines of less than 2 per cent. of the power of the steamer; and their lighter material will allow them to be built at within 15 per cent. of the cost and time that are required for the building of a first-class ocean steamer of the same length. The Zeppelin II.,—446 feet long, and the largest airship in existence,—cost less than \$250,000, has a speed of thirty-five miles an hour, and is driven by two separate engines of 200 combined horse-power, less than that of two racing automobiles.

The new machine of war "will be a ship as large and eventually much larger than present ocean battleships." It will fight from the height of about a

mile above the earth, and will maneuver during battle at a rate of sixty to sixty-five miles an hour. The deadliness of its fire is thus portrayed:

Nothing alive on the ground can escape the fire of an airship . . . its chief reliance in fighting infantry or cavalry will be upon the machine rifle, which can turn a stream of 400 bullets a minute on any troops within two miles. . . . The fire of an airship will annihilate infantry and cavalry beneath it as surely as the hand of God. It will not be directed long at any coherent body which could be called troops. Human nature forbids the possibility of men remaining to be shot down like rats in a pit. Summarized, the result of the introduction of the airship into warfare will be this: If cavalry or infantry are moved over a country patrolled by airships they will be annihilated . . . this means simply the abolition of infantry and cavalry and the end of land war as we now know it.

Not only are the armies of the world likely to be superseded, but the navies with all their mighty *Dreadnoughts* will be relegated to a new and inferior position. More than a year ago Major Baden-Powell, of the British army, declared that "a dozen *Dreadnoughts* would be absolutely helpless if charged with the task of preventing a squadron of air cruisers from gliding above them and reaching the British coast." The truth of this prediction is seen in the fact that instead of simply dropping explosives, as has been popularly supposed, the aerial battle-



THE KRUPP FIELD GUN FOR SHOOTING AIRSHIPS.

ship will attack its ocean enemy with large aerial torpedoes filled with high explosives. This torpedo will "be fired from a long, light tube; and the force of gravity acquired in the fall of a mile through the air will give it a great speed by the time it reaches the deck of a ship."

With the advent of the aerial battleship there will, necessarily, come the rivalry in building now existing with regard to battleships of the sea. It is the opinion of those competent to judge that a quarter of a mile is "a conservative estimate of the size that these ships will attain in a few years." A ship the size of the *Mauretania*,—that is, 790 feet long,—can quite certainly be expected within the next few years.

As regards the armament of the new aerial men-of-war the Messrs. Krupp have already produced a rapid-fire weapon weighing about 160 pounds; and these and the machine rifle would work such havoc that the non-expert cannot estimate its destructiveness.

In the public mind the "German invasion

of England," of which so much has been said and written of late, has been a land invasion. All the while Germany has been forging ahead with her preparations for invasion by air. From the article under notice we learn that Germany "has now nearly completed a \$1,500,000 airship plant at two adjoining towns on Lake Constance; that the plant contains four docks, which in time of war could turn out fifty or sixty airships a year. The airships that are to be built for the conveyance of passengers from one part of Germany to another are all to be chartered by the government and will be convertible into aerial battleships just as ocean liners to-day are held available as auxiliary men-of-war.

But,—will aerial warfare be permitted? "War a mile above the earth between corps of artillery firing into huge bodies of inflammable gas, where the defeated plunge down to the ground a mass of charred pulp, will become a thing too spectacularly horrible for conception. Will civilization permit it to exist?"

HOW PLANTS SEE.

THE power of plants to adjust themselves in whatever position may be most desirable with regard to the light is very curious, for the movements are as purposeful as if made under intelligent direction, and yet the plant cannot be credited with the possession of even an apology for any sort of a brain, although that is usually looked upon as a *sine qua non* for the seat of intelligence.

In the *Jahrbücher für wissenschaftliche Botanik* (Leipsic) Dr. G. Haverlandt publishes an interesting article, describing the minute structure and the mode of operation of the parts in plants that are specially designed for the perception of light.

The light-perceiving organs of plants are legion. They are cells in the epidermis which are lined on their inner wall with a thin layer of living matter that is especially sensitive to the rays of light that fall upon it. This sensitive layer underneath is enabled to take note of the direction from which the light comes by means of certain peculiarities of structure in the main part of the cell above it. That produces a symmetrical illumination of the cell when the light falls perpendicularly and an asymmetrical illumination when it falls obliquely.

These organs show modifications of two main types. One type, formed by smooth epidermis, has cells with a plane outer surface. This is the simpler type, of less perfect design than the other, for it merely allows the light to pass through and fall on the sensitive layer beneath, but does not aid in bringing out differences in the intensity of illumination by concentrating the rays of light over definite areas.

The second type is formed of papillose epidermis, which is made up of cells with curved outer and plane inner surfaces, forming, in effect, microscopic plano-convex lenses. In these, according as the illumination is perpendicular or oblique, the layer of living matter beneath receives either a symmetrical or an asymmetrical dispersal of light, and this, together with the greater concentration on the sensitive layer, gives a much better indication of the direction of the light than is possible with the first type.

There are myriads of these organs which serve as a kind of eye, although they are only crude attempts of nature, and at best can do no more than indicate variations in the intensity and direction of the light. They do not even show uniformity of structure.

Experiments that were made upon plants

to determine how fine a sense of light-perception they possess showed conclusively that many species of plants can detect fully as

slight differences in the intensity of light as man, but there can be no comparison beyond a general sensitiveness to light.

HEREDITARY TRANSMISSION OF DISEASE.

OBSERVATION of the inheritance of certain familiar diseases of the central nervous system prompted Dr. L. Merzbacher to undertake an extensive series of investigations in order to find out any possible evidence that the inheritance of diseases or defects is governed by definite laws of general significance to the human race.

He publishes the results of his work in the *Archiv für Rassen und Gesellschafts Biologie*, where he states that he was called upon to make a post-mortem examination of the brain of a man in which he found the cellular gray matter somewhat atrophied, but the fibers about normal. Afterward he looked into the history of the family and learned that the man's son had died at the age of twenty, after having suffered from youth with a disease with which three of his sisters and a grandmother were afflicted at the time, and which had been widespread through the family for several generations past.

The writer himself learned, in all, of twelve cases of closely related diseases extending through three generations, and then it transpired that he had chanced upon a family previously studied by a member of the Board of Health, whose observations corroborated his own, and also extended the records through as many as seven generations along diverging lines of the same family, comprising altogether a most valuable contribution to our knowledge of the possible inheritance of tendencies toward disease.

The diseased condition was progressive, but it was not always the same malady that developed in related families. Among the disorders that appeared were atrophy of the muscles of the lower leg and foot, atrophy of the optic nerve, hemeralopia, hemeralopia, and color blindness. These would appear in the same family succession for one generation after another.

In twelve of the families that formed links in the chain of evidence the malady developed in the children during the very first months of life, and the symptoms usually became more severe as time went on.

Sometimes the disease peculiar to the family would disappear completely for a genera-

tion and then reappear in the next. Often only one or two members of a large family would be affected, while the others would be entirely free from it, and it was noticeable that many more men than women were affected. Color blindness especially afflicted the men much oftener than the women.

Diagrams accompanying the article show the path of the diseases through the generations, and bring out the curious fact that the mother's influence predominates, and that she, more often than the father, transmits to the children a tendency toward disease or health.

In fact, there was not a single case where a son of a diseased family line transmitted the disorder to his children, the influence of the wife apparently overcoming any such tendency. But on the other hand children of daughters from the same family developed the disease even when it had not appeared in the mother.

Apparently, in contradiction to this was the fact that the disease seemed to have originated in a man whose case was recorded in the beginning of the line of succession.

From all the cases considered together the writer draws a number of general conclusions, in which he states that the rudiments of a defect or a disease may descend by heredity, but remain latent in the system without giving any evidence of its presence through several generations.

When such latent tendencies toward disease are present in the father they are not inherited by the children, and would rarely be directly inherited from a father in whom the disease was actively developed, although a latent tendency might be inherited by his daughter and appear actively developed in her children, but the children of the same man's sons would not inherit it.

The mother's influence is stronger, and she may transmit a defect or a disease that is latent or active in her own system, or if she has no such tendency she may overcome any influence of that sort on the father's side.

When a disease of this sort becomes established in a family it shows great stability in its development.

SOME PORTENTOUS ASPECTS OF THE M'KEES ROCKS STRIKE.

ROBERT BROWNING in one of his poems speaks of "the great right of an excessive wrong"; and it would be difficult to find a more apt illustration of this forceful phrase than that furnished by the recent strike at the plant of the Pressed Steel Car Company at McKees Rocks, a little below Pittsburg on the left bank of the Ohio. According to Mr. Paul U. Kellogg, who has been investigating conditions at the Schöen works, where the strike originated, and who publishes the results of his inquiries in *The Survey* for August 7, it was a case of the employers saying to the employees: "Take what you find in your pay envelopes and be thankful. Don't bother us with questions. If you are not satisfied with your jobs get out and make room for the many who are ready to take them." To Mr. Kellogg's mind the strike presents some very important aspects. On the side of the men it is half-prophetic.

It is a clean-cut illustration of the part which the Slavs may play in the industrial life of this

country. It is the protest of the half-assimilated, the half-Americanized, the half-skilled against the very industrial policies which have brought them here and which, by the deploying of fresh migrations, tend to keep them all down to what the company calls "ordinary day labor." It finds American workmen casting their lot with the Slavs, and it finds public opinion in the Pennsylvania steel district backing up their joint cause.

On the part of the employers, it may mark the introduction of a new system of industrial administration. Mr. Kellogg writes:

It [the strike] was caused by the rigorous, logical extreme to which the employing company carried out what they conceive to be progressive policies in multiple production. My understanding is that during the period of hard times they overhauled their equipment in such ways as to make them less and less dependent upon trained men. They established a track system by which even a crude working force practically drives itself in turning out cars, and a pooling system of payment which keeps the labor cost per car within a fixed charge to the company and which unloads the hazards of lost time and mistakes in construction largely upon the men. Apart from the vagrant charges of



From the Pittsburg Dispatch.

A GROUP OF AMERICAN STRIKERS AT M'KEES ROCKS.



From the Pittsburgh Dispatch.

SOME OF THE FOREIGN-BORN STRIKE LEADERS AT M'KEES ROCKS.

graft and abuse by foremen . . . the strike has been over a sweeping reduction in wages (as against 1907) which the men laid up to this new system. Their grievances crystallized in the charge that they had no means of knowing what was coming to them on pay day, and that when they complained about it they were given neither rate nor redress.

For, along with their modern operating policies, the company cling to an inflexible assertion of the most ancient property rights as a basis for running their plant. They will not tolerate petitions or meet with representatives of the men, and they refuse to arbitrate. They hold that so long as a man accepts employment in their works he must accept the terms they grant or quit; that so long as he can quit work the man who thinks himself under-paid has no grievance; and that (if one is to believe the Pittsburgh press) whether one man or a thousand quit work is none of the public's business. Its part is to keep the peace. That is what the company pays taxes for.

The track system was installed early in the year and the pooling system was at the same time given a general application. The track system is thus described:

The steel comes in sheets, is cut in lengths, heated and pressed, marked and punched, fitted with bolts, put together and riveted. . . . A track runs the length of the erection aisle. The trucks are placed on the track at one end, electric cranes pick up the plates, piece by piece they

are put together and riveted, and a completed car rolls off the other end of the track. There are perhaps twelve positions on this track, and at each position a group of men who perform one step in the process of completing a car. Every position is allowed, say, twenty minutes. If the gang at position 8 is slow, or has difficulties in getting out its stint, it holds up the whole procession, and every man in the earlier positions loses time. Gang 8 always wants car B from gang 7 the minute it is through with car A; and gang 7 always wants gang 8 to be through with car A by the time it finishes car B, so it can take car C from gang 6. If time wages were paid and a car erected in a stationary position, all the delays would fall on the company, and only constant prodding from a foreman would keep a loafer or a greener at high speed. By means of piece wages and a track down the erection aisle one gang drives another.

Formerly the men were paid by "straight piece work . . . and they would know at the end of a fortnight how much was coming to them." Under the pool-piece-work system introduced by the company the men "don't know what the pool is going to get per piece for any of the work it does, nor the lump sum due it at the end of a fortnight." Another charge is that under this system if work is spoiled the whole pool has to suffer.

Besides these grievances the men have others connected with their occupancy of houses owned by the company in a district "popularly known as Hunkeyville. These rent for \$12 a month for four rooms without water." A laborer cannot afford to rent one of these houses unless he fills it with lodgers; and there is continual trouble with the "house boss." "He is the pasha of Hunkeyville; and the opportunity for extortion is ready to hand. . . . One house boss had himself made a justice of the peace, and in that position made money hand over fist."

When 600 men in the erection department went out the company says they demanded 30 cents an hour and an eight-hour day. The men, however, state that they wanted a "working understanding so that they could know what was coming to them." The attitude of the company is clearly defined in the following statement, given to the press by President F. N. Hoffstot:

Some 600 of our workmen have seen fit to quit their employment. That is all right. If a man is dissatisfied with his work, or with his hours, or with his wages, it is his privilege to quit, but when he says another man who wants to work can't work, and won't let him work, why then that is a different matter. . . . There is nothing to arbitrate in the present difficulty. The officers of the company will not meet with any committee of the men. . . . The jobs are there for the men as soon as they want to go back to work, but the 600 who started all the trouble cannot work for the company another day.

When Mr. Kellogg visited the strikers he found 3000 men sitting on the ground listening to the various speakers. There was no disorder or violence. For the first time Americans had joined the Slavs; and one of them declared: "They have got the whole of us to fight now. We are trying to be men among men." It is this combination which gives the McKees Rocks strike a new significance in the labor troubles of Pittsburgh.

HITTING POWER OF THE AMERICAN NAVY.

THE story of the reinstatement and growth of target practice in the United States Navy during the last few years is graphically told by Rear-Admiral Robley D. Evans in *Hampton's Magazine*.

Most captains and all executive officers looked on it as a necessary evil, as it blackened the decks and the paint-work, broke more or less chinaware, and was generally a nuisance. The gun pointers were drilled to aim in the old way,—that is to say, the gun was so trained that the sights would come on the target as the ships came to the top of the sea and began to roll toward the target. Firing on the "weather roll" it was called, and it was good practice in those days, because it insured the shot a chance to hit the target on ricochet if it missed it direct. Sometimes the target was struck, but generally it escaped.

With the advent of more modern guns and the up-to-date fighting machines of the navy the necessity to be able to shoot became more and more obvious. The inception came in 1896 and 1897 under Rear-Admiral Francis M. Bunce, then commanding the North Atlantic Squadron. To the system instituted by him must be attributed a large part of the success of our gunnery in the Spanish-American War. The general adoption of smokeless powder has necessitated the resighting of all guns. The real work of perfecting details and of efficient training in methods and practice has been accomplished since that time.

In March, 1902, Rear-Admiral Evans was ordered to China in command of the *Kentucky*. This gave him the opportunity he had long been waiting for. He at once set about interesting the personnel of his command, installing devices which would insure opportunity for regular and frequent practice, and to study thoroughly the mechanism needed to accomplish results.

The first difficulty came in the selection of a target which would not be destroyed by a few shots, but would allow of continuous practice. This was accomplished finally by mounting a paper drawing of some object on the end of a spar.

One end was so secured that the outer end could move freely up and down and, at the same time, sideways. To impart these motions suitable pulleys were connected with the spar. Then on the outer end was placed the target and behind this a suitable box to catch the bullets after they had passed through the paper. For want of a better name we called this the "ping-pong machine," and it bears that name in the service to-day. Flobert rifles were bought with a plentiful supply of ammunition. These small rifles were fixed to the turret and broad-side guns in such a way that the training of the smaller guns trained the larger ones at the same time and in the same way.

The results of this drill at once became apparent when regular target practice was resumed. One of the six-inch guns made

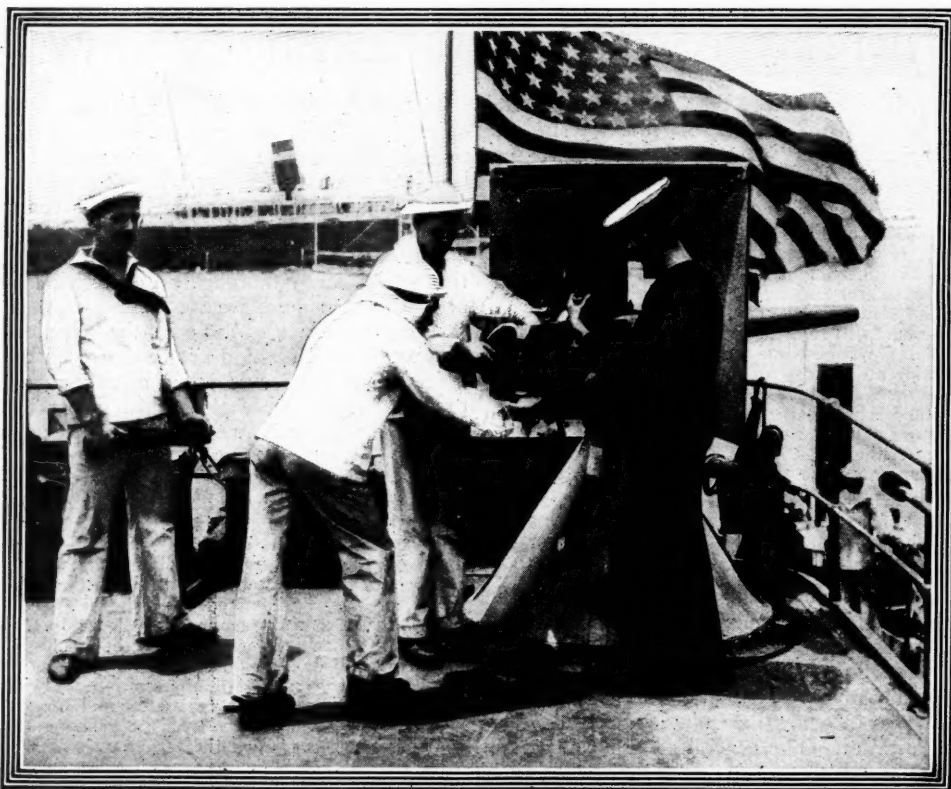
fifteen consecutive hits, the first one of which knocked the bull's-eye out of the target. But here a new problem presented itself; the sights on nearly all the guns proved practically worthless. On the *New Orleans* firing of the turret guns had to be stopped, for the sights were so faulty that they jarred out of adjustment with each discharge. Fortunately the personnel of the fleet supplied the necessary mechanical skill and technical ability. Old sights were readjusted and made stronger.

On the *Kentucky* Lieutenant McLean had fitted a new sight to one of her five-inch guns which carried a low power telescope with rather coarse cross wires. During the first day's firing the gun with the McLean sight made seven hits in one minute, and they were all bunched in a small space. The field of the telescope was small and the cross wires coarse, which made the firing slow, but it was evident that the gun could keep on hitting for any length of time. In view of the good results obtained I sent to Paris and ordered telescopes of high power and finer cross wires for all guns.

When the turret guns of the *Kentucky* were first fired the sights behaved so badly that I ordered the firing to stop. The principle under which they were constructed was wrong, and no amount of patching could do them any good. Something entirely new had to be devised, and fortunately for me and for the service I found the man who could do the necessary work. Assistant Paymaster William A. Merritt was the man. Mr. Merritt was an educated mechanical engineer. When the Spanish-American War broke out he felt it his duty to go to the front and succeeded in securing an appointment in the pay corps of the navy. Seeing the trouble with the turret gun sights he volunteered to work on something to take their place, and after weeks of the most exacting labor produced the drawings of a design for sights, which . . . was ordered to be fitted to all turret guns. When the sights were tested on board the *Kentucky* excellent results were obtained.

The newly established trophy for excellence in gun practice was won by the battleship *Oregon* in 1903 and remained in the China Station two years, when it came to the North Atlantic Squadron, which I had the honor to command then.

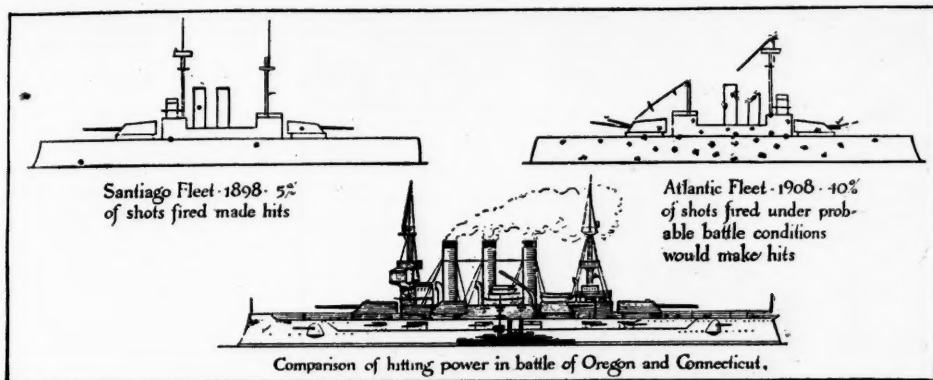
Exactly what percentage of increase of



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TWENTY TRUE SHOTS A MINUTE.

(United States naval gunners handling a rapid-fire deck gun.)



TEN YEARS' PROGRESS IN AMERICAN MARKSMANSHIP.

efficiency may be accepted as the result of the efforts of Rear-Admiral Evans and other officers and men of the navy the editors of his article endeavor to set forth in an editorial comment.

It has been estimated that in the battle of Santiago "probably 5 per cent. of our shells struck the enemy."

When engaged in target practice, at ranges twice as great as those that prevailed at Santiago, our gunners last year averaged 60 per cent. of hits throughout the fleet, while one ship made a score of 80 per cent. In actual battle it is reasonable to assume that 40 instead of

60 per cent. would represent the hits made by our gunners.

Not only this, but the rapidity of fire has increased about fivefold, while smokeless powder has added greatly to the velocity of the projectile, and energy increases as the square of the velocity.

The *Oregon* during five minutes of an engagement was capable of firing at the enemy 15,800 pounds of metal. . . . In the same time the *Connecticut* can deliver 89,200 pounds. But "it is the hits that count," and of the 15,800 pounds only 5 per cent., or 790 pounds, would reach the enemy. Of the 89,200 pounds, 40 per cent., or 35,680 pounds, would strike home.

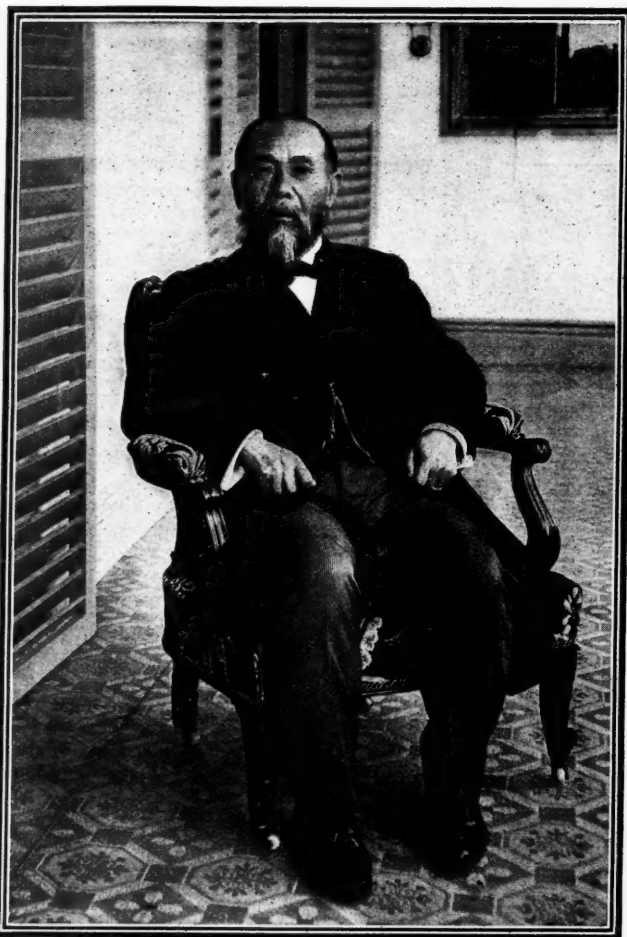
PRINCE ITO AND KOREA.

PRINCE ITO'S resignation as resident-general in Korea marks an epoch in the history of the Japanese control of the peninsula. When some three years ago the Prince was offered the post of first resident-general he was reluctant to accept it, having been conscious that, owing to his advanced age, he might not be able to hold the office for any length of time. But the veteran statesman was, as the *Jiji* observes, prevailed upon to comply with the earnest request of the ministry upon the condition that he would remain in Korea only until the Japanese protectorate should have been placed upon a fairly working basis. Continuing, this Tokio journal says:

Once in the new post Prince Ito found things in a state of indescribable confusion, especially with regard to Korea's relations with France and Russia. But under his experienced management many a knotty problem has been successfully disposed of, until to-day Korean ad-

ministration has entered upon a new stage wherein the internal reform of the country can be carried on without interruption or interference from outside. In short, Prince Ito has finished the work he was intrusted with, and the time has come for him to recommend a successor.

An article on Prince Ito and his Korean work, appearing in the June issue of the Tokio monthly *Taiyo*, contains many noteworthy observations. For one thing the writer contends that Prince Ito, and indeed all the "elder statesmen," are too sensitive to foreign criticisms. To him there is but one course open for Japan with regard to the Korean question, and that course is the fusion of the two nations into one state. Not only the march of recent events but the geographical configuration and historical relationship between the Hermit Kingdom and the Mikado's Empire justify, according to this essayist, Japan's taking this inevitable



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PRINCE ITO, WHO HAS RECENTLY RESIGNED AS JAPAN'S
RESIDENT-GENERAL IN KOREA.

course, and no Western power in Japan's position would have hesitated to resort to more vigorous measures than have been employed by the insular nation. But the canon of the elder statesmen is: "Do not hurt the feeling of Western powers," and in their efforts to avoid unsympathetic criticisms from foreign nations they have retarded the solution of the Korean problem.

It has popularly been said that Prince Ito himself was the initiator of the existing régime in Korea. But upon a high authority I am inclined to believe that the idea of placing Korea under a resident-general was suggested by a third power which had been intimate with Japan. But for this suggestion the elder statesmen would have hesitated to act as they did. Even after Japan decided to establish a protectorate

over the peninsula her steps have been necessarily cautious, and the fundamental questions relating to the status of Korea still remain unsettled. Such diffidence and cautiousness is almost foreign to the spirit of Young Japan, animated with high aspirations and determined to attain them in spite of all difficulties. In managing a people like Korea, to which subterfuge and chicanery have become almost innate, it is imperative that all the important problems affecting its relation with its suzerain state should be promptly and decisively settled. Viewed in this light Prince Ito's Korean administration has been successful only in leading us a step toward the ultimate settlement of the difficult problem.

Both ethnological and philological inquiries, the writer asserts, lead to the conclusion that the Japanese and Koreans descended from one and the same stock, and there is no reason why the two nations should not unite in one state. Without Japan's protection Korea cannot exist, and, with Korea passing into the hands of a third power, Japan's existence would be imperiled. It is, therefore, Japan's duty to make the utmost endeavor to promote the welfare of

the Korean people, while it is incumbent upon Korea to discard her time-honored policy of subterfuge and double dealing and take Japan into confidence.

It may be noted that the resigned resident-general has been appointed President of the Privy Council. Viscount Sone, who was vice-resident-general under Prince Ito, has been promoted to the resident-generalship.

Prince Ito inevitably seems to stand for the spirit of the Japanese people as a governing unit. His name first became known to the Western world in connection with the Chinese-Japanese war of 1895. Since then he has been the best known and most highly considered of Japanese statesmen in the eyes of Occidental peoples.

HARBIN: RUSSIA'S UNCOMPLETED MANCHURIAN METROPOLIS.

THREE hundred and fifty miles west of Vladivostok and six hundred miles north of Dalny, in the geographical center of Manchuria, stands the twelve-year-old city of Harbin, planned by Russia to become "the Moscow of Asia, the Minneapolis of the Far East, and the Chicago of the Orient." A visitor to the town desirous of reporting on its condition to-day would have to describe it in some such terms as these:

Grass grows in the streets; no smoke issues from the tall chimneys of the mills. The large and costly stocked department stores open for the day and only a casual customer appears. Theaters have closed. Only one or two *cafés chantants* invite the midnight pleasure seeker, in place of the previous twenty-six. The houses are out of repair and the plaster ornamentation of many of the large buildings has fallen away, disclosing the naked lath, revealing the fact that the buildings in part were only imitation stone. The town is existing on the expenditure of the railway. The salaries of the employees maintain the few stores. . . . The last financial year of the bank was closed without the payment of the customary dividend. The railway is losing at the rate of 5,000,000 roubles per annum.

Yet less than five years ago, in the early period of the Russo-Japanese war, everything was booming in this selfsame city.

The immense armies of the Czar, transported across Siberia, came to a halt at Harbin and were here encamped and forwarded on to the front as their time came. Here was the real military headquarters. . . . Here the officers left their families, some wives, some mistresses; and here the camp follower halted and went no further; here the gamblers and sharpers plucked the easy-going and good-natured soldier, and the commercial adventurer divided the loot with the mercenary official. To Harbin swarmed the women, who made it their abode, bringing with them the luxuries of Paris and the life and atmosphere of the boulevards. Theaters multiplied, *cafés chantants* were in full blast, drinking saloons and pleasure resorts abounded. No less than twenty-six music-halls catered to the pleasures of the soldiers, running day and night without pause. The pace was swift, life was short, and extravagance and recklessness the order of the day. Champagne flowed like water. Magnums took the place of the ordinary pint or quart bottles. They cost more and the money would go quicker. . . . Houses were at a premium, and fortunes were made in real estate and building transactions. Chinese and Jewish money-lenders flourished, jewelry dealers were reaping a glorious harvest, and fashionable dry-goods stores carrying the latest and most expensive stocks of feminine wear did a thriving trade.

Breweries, four of them, were hastily erected; eight vodka distilleries were placed in operation . . . and other industries were rapidly financed and carried through. Profits were enormous. . . . Everything was lovely, and as long as the boom lasted no one cared to look ahead.

The narrative of Harbin's rise and decay, from the pen of George Bronson Rea, in the *Far Eastern Review* (Manila), from which the foregoing excerpts are taken, reads like the story of some American mushroom mining town. But this remark applies to the rapidity of growth only. In Harbin "Russia has shown the world how to design and create a city, overnight as it were, to further her political designs and expand her influence in the Orient." Mr. Rea characterizes it as "one of the greatest achievements in city construction witnessed by the world." In September, 1896, the Chinese Government and the Russo-Chinese Bank concluded an agreement for the construction and management of the Chinese Eastern Railway, which was to connect the Pacific littoral with the great Trans-Siberian Railway through Chinese territory in northern Manchuria. In the following spring the work was begun, and the same year the city of Harbin was founded. It was to be not only the headquarters of the new enterprise but also "the strategic center of Russia's new empire, and but for the unexpected war with Japan her purpose would have been crowned with success." Harbin, as it stands to-day, "is a purely Russian product laid out by the railway engineers." The original old town is three miles distant from the present railway depot. Pristan, the commercial town, is "on the side of the railway bordering on the river." The official city or district, "where all the public buildings, offices, hotels, etc., are located, is in close proximity to the railway station." The purely Chinese town, the headquarters of the governor, is known as Fu-tu-tien, and is about four miles from the official district.

Here, at Harbin, it was that Russia planned her Asiatic metropolis; and "every inducement was held out to the confiding Russian capitalists to purchase lots and to cast their fortunes in with the new venture."

Wide streets were laid out and paved, electric lights installed; fine, large official buildings, railway clubs, hotels, and schools were



BUSINESS BUILDINGS IN "RIVER TOWN," HARBIN.

erected, immense car and machine shops equipped. . . . The town rapidly outgrew its original delimitations, and further land was added to meet the expansion.

In the old town, land originally offered at a little over one cent gold a square foot soon "soared to over seventeen cents gold per square foot"; and "within a year from the time that this section was opened to the public it is estimated that over \$5,000,000 gold was expended in building operations." An industrial boom followed which at one time promised to make Harbin the "greatest manufacturing center in Asia." Saw-mills, mines, breweries, vodka factories, flour mills, and other large schemes were promoted. In 1904 ten flour mills were producing nearly 1,000,000 pounds a day. "Prosperity was in the air. Everybody seemed to have money, and it was spent like water. Easy come, easy go."

The new city was Russian to the core. "Foreigners were practically excluded or only permitted to remain on sufferance." Russia claimed under the agreement "exclusive and absolute administration of the railway lands." The Chinese held that this

clause was "not in the original Chinese version of the document." Harbin was "as distinctly a Russian city as though located on the Volga." Millions of rubles "went into official edifices." Millions more went into hospitals, schools, and fine residences for the commanding general and other high officials. A few more months and the dreams of empire would have been realized. But the Treaty of Portsmouth changed everything at Harbin. No determined effort had been made by the merchants to secure the native trade, and when the evacuation took place, and with it a return to normal times, there was no market.

The best customers for the flour mills, the breweries, and vodka factories were gone. . . . The theaters, bereft of their patrons, closed; the music-halls followed. . . . Houses that had been at a premium were vacated, new tenants came not, and decline in real estate value followed. The brick factories and saw-mills closed for lack of business. No one wanted to build. . . . The large official hotel was converted into the offices of the Russian Consulate General.

And thus an end has come to the Russian dreams of an Oriental Moscow.

As is generally known, Harbin was opened to the world as a treaty port; but fierce disputes have arisen in official circles as to which Harbin is thus designated. The Russians claim that the old Chinese town, administered by the Chinese Governor, is the one; but the Chinese hold that the new city is the treaty port, and the pretensions of the Chinese Eastern Railway to regulate the affairs of Harbin "have been strenuously opposed by the American consul, Mr. Fisher, and by the British and German consuls at Mukden." The at-

titude on both sides to the dispute is uncompromising. Russia and China will not give in on any point; and Japan sides with the former.

If Russia refuses to recede from her position, the question eventually arises, What then? China is too weak to forcibly assert her idea of right, and Russia's actions are justified by the original French text of the agreement. If this document is the true one, other powers cannot interfere, as Russia's action is in accordance with the rights surrendered by China, and does not, therefore, conflict with the open door policy.

A BEAUTY CONTEST IN SPAIN.



ROSA DE LA FIGUERA.

ROSA RODRIGO GÓMEZ.

ÁNGELES SOLER Y MIOUEL.

SUCCESSFUL COMPETITORS IN THE BEAUTY CONTEST AT VALENCIA.

(The first prize was awarded to Señorita Rosa de la Figuera y de la Cerda, whose portrait appears at the left.)

IT is difficult to realize, on reading the August number of the Spanish magazine *Hojas Selectas*, which is published in Barcelona, that since its pages were printed the streets of that city have run red with the blood of rebellious citizens. Not the slightest indication of the impending catastrophe is to be discerned in any of the contents of the magazine in question; on the contrary, in one article at least, that on the Exposition at Valencia, the spirit of loyalty to the sovereign is notably prominent. For example, the visit of the King, for the purpose of opening the Exposition, is referred to in the following terms:

On the twenty-second of May King Alfonso visited the beautiful city where flourish in equal luxuriance the flowers of the soil and the flow-

ers of genius, and he was received by the governor, who welcomed his Majesty in the name of the citizens. The King and his suite proceeded to the Cathedral amid the cheers of an enormous multitude, whose plaudits betokened the delight and enthusiasm evoked by the presence of the sovereign.

Besides the usual displays common to exhibitions of the kind the Valencia Exposition was characterized by two special features,—a battle of flowers and a beauty contest. The former was "an indescribable festivity, a magnificent review of art, wealth, good taste, and enthusiasm, superior in many respects to those of Nice"; while the beauty contest, "by reason of the interest it aroused," was "one of the most important events of the Exposition." Prizes were offered to the competitors who should secure the first six



SOLEDAD CRISTALLYS GÓMEZ.

INÉS SANCHÍS MAS.

JOAQUINA SAAVEDRA FONTES.

THREE OTHER SUCCESSFUL CONTESTANTS IN THE SPANISH BEAUTY CONTEST AT VALENCIA.

places in a popular vote; and from these six by a further plebiscite the "Queen of Beauty" was to be chosen. Valencia is world-famous for its beautiful women, and on this account the greatest curiosity was aroused as to the result of the contest, which seems to have been arranged on a thoroughly democratic basis, for we read:

In order the better to insure equality in the awards the prizes were offered to competitors from the aristocracy, the middle class, and the populace, since, like goodness and talent,—those precious gifts of heaven,—beauty in its bestowal is not confined to any one class.

Readers of the REVIEW will, we think, be interested in seeing the types of beauty most in favor with the Spaniards themselves. The accompanying illustrations represent the six successful competitors in the first popular vote; but, as the *Hojas Selectas* pertinently remarks, "it is impossible to give an exact idea of the originals, with the differences of hair, eyes, mouth, and complexion which form the distinctive characterizations of the several beauties." The six beauties whose portraits are here reproduced are thus briefly described by the Spanish writer:

Rosa de la Figuera y de la Cerda is the sister of the Marquis of Fuente el Sol. Sixteen years old, and about to leave college, her complexion has the resplendent freshness of the rose. With black and wavy hair, teeth somewhat small and white as grains of rice, eyes large and black, her face is a perfect oval and mouth of admirable design.

Joaquina Saavedra Fontes, daughter of the Count de la Alcudia, is a swarthy beauty who

recalls the type of the Galatea of the Valencian poet.

Angeles Soler, of the middle class, is admired for her "timid candor" of countenance, which sets admirably in her white dress embroidered with gold.

Inés Sanchís is the type of the beauties of the orchard. Since the "quality" of the soil has ascended the throne of beauty many have sought her hut shaded by orange-trees.

Soledad Cristallys Gómez, daughter of a surveyor of customs, combines grace with beauty, and captivates masculine hearts with the sweet and serene glances of her eyes, which shine like suns in a heaven of snow.

Rosa Rodrigo Gómez is a Hellenic beauty of most correct features and with splendid black hair.

As mentioned above, from these six beauties the final selection of the Queen of Beauty was to be made. To the successful competitor a prize of 5000 pesetas (\$1000) was offered, and to the second and third contestants prizes of 3000 and 2000 pesetas respectively were to be awarded. Public opinion was much divided as to the probable result of the final plebiscite:

Popular favor inclined to the elegant *huerfana*; political partisans bestirred themselves to secure the election of the "Republicana," Angeles Soler, who is the daughter of a prominent Republican; while the aristocrats left no stone unturned to elect one of the competitors in whose veins "blue blood" circulated.

Esthetic taste, however, prevailed, and without prejudice "the universal suffrage declared, by a large majority of votes, in favor of the Señorita Rosa de la Figuera y de la Cerda."

JANE LATHROP STANFORD: MOTHER OF A UNIVERSITY.

"ONE of the bravest, wisest, most patient, most courageous, and most devout of all the women who have ever lived," are the terms in which President David Starr Jordan of Stanford refers to "the lone, sad figure of the mother of the university, strong in her trust in God and in her loyalty to her husband's purposes, happy only in the belief that in carrying out her husband's plans for training the youth of California in virtue and usefulness she was acting the part to which she was assigned." They occur in a Founder's Day address delivered at Stanford University by Dr. Jordan and published in the *Popular Science Monthly*. Few persons on reading that address will be disposed to say that the eulogy is one whit too pronounced.

Leland Stanford, Junior, University, founded by Governor Stanford in memory of his son, his only child, whose name it bears, was opened "on the first day of October, 1891, a clear, bright, golden California day, . . . full of good omen." . . . During the first two years of its history, says Dr. Jordan, "it was the hopeful experiment of Leland Stanford. The next six years its story was that of the heart throbs of Jane Lathrop Stanford." During those six dark years "the future of a university hung by a single thread, but that thread the greatest thing in the world, the love of a good woman." Dr. Jordan had been asked by Governor Stanford to take charge of the new institution; and he thus describes his first meeting with the founder and Mrs. Stanford:

He told me the story of their son, of their buried hopes, of their days and nights of sorrow, and of how he had once awakened from a troubled night with these words on his lips: "The children of California shall be my children." . . . No cost was to be spared, no pains to be avoided, in bringing this university to the highest possible effectiveness.

Mr. Stanford explained that thus far only buildings and land had been given, but that practically the whole of the common estate would go in time to the university, when the founders had passed away. If he should himself survive, the gift would be his and hers jointly, though the final giving would be left to him. If the wife should survive, the property would be hers, and in her hands would lie the final joy of giving. Mr. Stanford gave his reason for not turning over the property at once, for this might leave his wife no controlling part



THE LATE MRS. JANE L. STANFORD.

in the future. It was not his wish that she should sit idly by while others should create the university. So long as she lived it was his wish that the building of the university should be her work.

This attitude of chivalry in all this needs this word of explanation, for it shaped the whole future history of the university endowment. It was the source of some of the embarrassments which followed, and perhaps as well of the final success.

On June 22, 1893, Mr. Stanford died suddenly, and thereupon the estate fell into the hands of the courts.

The will was in probate, the debts of the estate had to be paid, the various ramifications of business had to be disentangled, and meanwhile came on the fierce panic of 1893. All university matters stopped for the summer. Salaries could not be paid until it was found out by the courts by whom and to whom salaries were due. All incomes from business ceased. There was no such thing as income visible to any one, least of all to the great corporations.

Beyond her jewels, Mrs. Stanford "had practically nothing of her own save the com-

munity estate, and this could not be hers until the payment of all debts and legacies had been completed. These amounted as a whole to eight millions of dollars." Most women would have closed the university until the estate was settled, its debts paid, and the panic over. Mrs. Stanford decided otherwise. President Jordan was told to go ahead with the university, and that whatever money could be got should be handed over to him. The task was not an easy one. As there was no regular income, the payment of salaries was necessarily most irregular. President Jordan relates an incident showing most vividly what the conditions at the university were at this juncture:

At one time in August, 1893, Mrs. Stanford received from Judge Coffey's court the sum of \$500 to be paid to her household servants. It was paid in a bag of twenty-five \$20 gold pieces. Mrs. Stanford called me in and said her household servants could wait; there might be some professors in need, and I might divide the money among them. I put the money under my pillow, and did not sleep that night. Money was no common thing with us then. Next morning, on Sunday, I set out to give ten professors \$50 apiece. I found not one who could give change for a \$20 gold piece, and so I made it \$40 and \$60.

For six years "the professors were paid by personal checks of the president," and the period was one of incessant struggle. At last there was a "glimpse of daylight," but this was succeeded by "still darker night." The United States Government brought suit against the estate "for the purpose of tying up everything in it until the debts of the Central Pacific Railway were paid." After two appeals by the Government, the case was finally won by Mrs. Stanford, "and

once for all and forever the future of the university was assured."

This was the end of the dark days, but not of the days that were difficult. There were still \$8,000,000 to be paid. There was still the uncertainty as to whether Mrs. Stanford could survive to pay it, and the estate must come into her hands before she could give it to the university. She made many attempts to facilitate this transfer. At one time we have the pathetic figure of the good woman going to the Queen's Jubilee in London with all her own possessions, half a million dollars' worth of jewels, in a suit case carried in her hand. She hoped to sell these to advantage when all the world was gathered in London. But the market was not good, and three-fourths of them she brought back to California again.

Mrs. Stanford died suddenly at Honolulu on February 28, 1905. In accordance with her written wish, her jewels were sold and a fund, known as the "Jewel Fund," \$500,000, was established for the maintenance of a library and the purchase of books and other publications.

President Jordan quotes from several of Mrs. Stanford's letters showing how sacred a trust she considered the university to be. From these the following extracts are culled:

Every dollar I can rightfully call mine is sacredly laid on the altar of my love for the university, and thus it shall ever be. . . . I am so poor myself that I cannot this year give to any charity; not even do I give this festive season to any of my family. . . . I am only anxious to furnish you the funds to pay the needs required. I could live on bread and water to do this. . . . I could lay down my life for the university. Not for any pride in its perpetuating the names of our dear son and ourselves, its founders, but for the sincere hope I cherish in its sending forth to the world grand men and women who will aid in developing the best there is to be found in human nature.

DICTIONARY MADE AND PRINTED BY ONE MAN.

IT is unusual, to say the least, for a lexicographer to be his own illustrator, printer, and stereotyper. This, however, has been the experience of Mr. Ewan MacDonald, whose work, a completely new Gaelic dictionary, is described by Mr. Tighe Hopkins in the *World's Work* (London) for August as "in sundry ways a unique achievement, intellectual and mechanical," and, considered as the doing of one man, "not less than astonishing." Astonishing it certainly is; for it is "the performance of a man self-taught throughout, as scholar, compiler, draughtsman, and printer." Mr. MacDonald

was to have been an engineer, and to this end he studied at King's College, London, where also he "worked at the forge, the lathe, and in the foundry."

The fates of his youth, however, directed him to the stool of a clerk, and he followed his grandfather, father, and uncle in the well-known firm of army agents, Cox & Co. While in this service he took to volunteering, and, after serving some months in the Queen's Westminster, joined the famous London Scottish, where he first learned to finger the chanter of the bagpipes. Here, also, starts his interest in Gaelic. But the speakers of Gaelic were not many in the London Scottish, and MacDonald's prog-

ress in that hard idiom was slow.

It was in the tents of certain volunteer regiments in Scotland that he first heard Gaelic spoken as a Gael speaks it, and he soon made up his mind to master the language compared with which Greek is nowadays far easier of acquisition. After ten years of service as a clerk he gave up his position, went to Scotland, and, becoming proficient in the bagpipes, attended weddings and other celebrations, chiefly in the Western Isles, where Gaelic was commonly spoken.

It took Mr. MacDonald ten years to acquire "the full and easy power" over Gaelic which "he wields to-day." In the meantime he had decided that a new dictionary was necessary, and "single-handed he set out to make one."

This vast compilation . . . will contain from 950 to 1000 closely printed pages, 90,000 words more or less, and from 800 to 900 illustrations. Every word of it has been written out by the compiler himself, who has handled some 20,000 slips of manuscript; he has drawn all but a small number of the pictures (knowing nothing of draughtsmanship when he commenced the task), and every syllable of the type is his own setting. Setting and correcting the type alone would probably mean about ten hours' labor to the page; and, as has been said, the pages will approach the thousand.

Mr. MacDonald overhauled the few Gaelic lexicons that had been published, arranged with Gaelic scholars throughout Europe for the revision of his manuscript, bought a handbook on printing and a second-hand press, and in due time set the type himself, and even did his own stereotyping. Usually his working day was one of twelve hours, and at certain seasons it was extended to sixteen hours.

Mr. Hopkins recounts some of the difficulties of advertising that this enterprising author-publisher has met with:

In the ordinary course of business a work of this quality and magnitude is extensively advertised in newspapers and magazines, the editor or publisher is interviewed, paragraphs are scattered here and there, and circulars are issued broadcast to possible subscribers. The maker of the Gaelic Dictionary, an unknown amateur, incessantly striving against odds of all sorts, knew



MR. MAC DONALD PRINTING HIS GAELIC DICTIONARY.

little of the ways of reaching the public he aimed at, and had next to nothing to spend upon advertisement. A simple broadsheet or so, a few specimen pages of the lexicon: these were his best devices, and the postage of these was an item to be very seriously considered.

To bring in "a little sorely needed grist" Mr. MacDonald has issued pocket books in Gaelic, as well as Christmas and New Year's cards; but one reads with regret that "the dictionary is not selling at a profit" and that Mr. MacDonald "has been selling his cherished store of Gaelic books,—the accumulations of thirty years,—to help him forward with the undertaking of his life." For thirteen years he has been helped in the work by Mrs. MacDonald, who "has spoken Gaelic since she spoke anything." The dictionary is to be issued to the subscribers in two or in three volumes, as they choose; and the Gaelic Society of London, besides numerous students of Gaelic throughout the world, including Sir John Rhys, Professor of Celtic at Oxford, and Dr. Zimmer, Professor of Celtic Philology at Berlin, have given it hearty indorsement.

The successive installments of the work are going to Australia, New Zealand, Natal, Central Africa, Egypt, Honolulu, Tahite, Canada, the United States, Ireland, France, Germany, and Bulgaria.

It is impossible to read the story of Mr. MacDonald's triumphs over apparently insuperable obstacles without feeling that there ought to be some means of bringing him within the scope of the operations of the Carnegie Hero Fund.

WHY AMERICANS ARE UNDER-LANGUAGED.

UNDER this caption Mr. Charles C. Ayer in the August *Forum* presents a few wholesome truths to his fellow countrymen. He starts off by positing "inability, indifference, or whatever it may be, on the part of the American toward foreign languages." One reason for this is:

The upper-class Americans feel no incentive to learn to speak the modern European languages when at home in the United States, since they have little opportunity to speak them with persons whom they can regard as their equals socially or intellectually. . . . The upper-class European seldom comes to America, and when he does come the chances are . . . that he will be able to speak English better than any but a very few Americans would be able to reply to him in his native tongue.

When Americans travel abroad there is little opportunity to practice their French or German, for they "usually travel with friends or relatives, and English is the language of the trip." Should they meet cultivated Europeans, the latter "can often converse in English satisfactorily." Thus the average American traveling abroad on a summer trip does not suffer seriously from being "under-languaged." Mr. Ayer thinks that of Americans living abroad very few speak the language of the country or even pretend to speak it creditably. He says:

When we read in the society column that "Mrs. So-and-So and daughters have returned from a three years' residence abroad in Berlin, Paris, and Rome," we can feel pretty certain that they have not worried much over German, French, and Italian, but have enjoyed life to the full in the agreeable American colonies of the cities in which they have lived, where English is, of course, the vernacular. . . . Most Americans abroad see no society excepting that to be found in the American colony. This is not because European society is necessarily exclusive, but because the average American, it would seem, is indifferent to Continental society, to say the least, while the strictly fashionable American seems to be seriously interested only in English society.

The reasons for this are not far to seek. There is "no barrier of language in England as there is on the Continent. Secondly, the English at the present time lead the world socially."

The London season is the most brilliant social epoch to be found on the face of the globe, and, happily for us, English is the language spoken, English the social language par excellence. Why spend time and labor in learning French and German when for our immediate purpose they will be of no use?

Turning to the commercial side of the question, Mr. Ayer says "it is easy to see why our business men are 'under-languaged' as compared with the hotel keepers in Switzerland and the milliners of the Rue de la Paix. It is merely a matter of business." As thousands of the immigrants arriving in America bring no money to spend, "our merchants do not need to go to the trouble of learning their languages in order to do business with them." On the other hand, many of the Americans who go to Europe every year have, to speak colloquially, "money to burn."

But, though social and commercial reasons may be the chief ones for our indifference to foreign tongues, there is, in Mr. Ayer's opinion, another reason why "we are not ambitious to speak foreign languages well." It is that "we do not look upon our own language as a thing sacred."

We are notorious for our slovenly speech. Indeed, an American wishing to teach English abroad would do well not to mention his origin. Our lack of interest in spoken English is unfortunate. Of course it is only lack of interest. Most of us know right from wrong, at least we say that we do, but have not the time to take pains. This attitude is an interesting one in that it is so different from that of the Germans, the French, and even the English, who take such a keen pride in their language that they would be ashamed not to speak it well. Good speech with them is a requisite in good society. It is, in other words, good form. Not so with us, though we are punctilious in some kinds of good form. We dress well, entertain handsomely at dinner, have automobiles, give box parties, etc., as if they were all that constituted good form. But our speech we neglect. In the United States, in spite of the agitation over the teaching of English in the schools, the matter of spoken English is sadly neglected. By many Americans a person who pronounces well, uses good language, and is interested in discussing the niceties of speech is regarded as a prig and a bore. Bad English is heard in college classes, bad English which often is allowed pass unchallenged, because a professor is embarrassed to correct a senior. School teachers and even college professors often treat their language as they would an outing suit. . . . A person who does not use his own language well will never go very far in a foreign tongue.

With the Germans, the ability to speak English is regarded as "an accomplishment that they cannot afford to neglect." They desire to speak English well, "just as they wish to possess the other accomplishments. In other words, it is good form to speak English."

The Americanization of immigrants will have its effects on the future of the Continental languages in the United States.

Children born of foreign parents in America, though they may understand the language of their ancestors, seldom speak it purely. They do not wish to speak it. They are ashamed of their German, Italian, or Scandinavian origin; they are proud to be Americans. Many economists see in this attitude one of the most hope-

ful assurances of the ultimate power and prosperity of the United States as a homogeneous nation. This is doubtless so, but it is bad for modern languages.

The living, spoken language, says Mr. Ayer, "is scarcely heard in the classroom"; and it is only too true "that many of our American-born language teachers are unable to speak the languages they teach."

FRANCE AND ANGLO-GERMAN RIVALRY.

AS long ago as 1907 a German writer (Counselor Rudolf Martin, in his book, "Kaiser Wilhelm II. und König Edward VII.") declared that "the imperialist and resolutely anti-German policy of King Edward VII. will not long be tolerated. This policy will be modified before the imminence of a war with Germany, or after the first results of such a war: the crushing of France and the annexation of Belgium and of Holland. If not, we shall descend on England."

This proposition of an aggressive nationalism is the formula of a military doctrine with which the Germans have become obsessed; and since with each fresh tension between England and Germany the drawing of France into the conflict seems to have become a fixed idea of the imperial policy, men of affairs in the last-named country are asking why this should be so. M. Albert Touchard, in the *Correspondant*, of Paris, attempts to answer the question and to show that the "crushing of France and the annexation of the Netherlands is a necessary prelude to any decisive operation of Germany against England; that this necessity exists in fact, and that it is the result of causes more profound than the theory of hostage, put forth by Professor Schiemann, and more permanent than the 'entente cordiale.'" He says:

Among the economic causes of Anglo-German antagonism three main facts should be borne in mind in studying the subject: The economic expansion of Germany is detrimental to England; this expansion is a matter not solely of prosperity, but of necessity; and it is at the mercy of the power that is mistress of the seas.

In support of these facts the following figures are submitted:

In fifteen years, from 1892 to 1907, the annual external commerce of Germany increased 132 per cent., that of England 60 per cent. only; the value of the German mercantile navy advanced

from \$65,400,000 in the year 1895 to \$162,000,000 in 1905; while her steamboat fleet has tripled in ten years. . . . To this extent England has been injured as "carrier of the seas."

At first these figures appear eminently satisfactory from a German point of view; but a closer analysis shows that year by year the excess of Germany's imports over her exports increases, the difference in 1907 being \$440,000,000. These imports are necessary to her very existence; to pay for them she must at all costs increase her exports, and this she has hitherto been unable to do. This, says the *Correspondant* writer, indicates the true character of her expansion: her necessity, while an irresistible power, is also a danger; for that which creates the wealth of the empire creates at the same time her source of weakness. Her political vulnerability increases in proportion to her economic vulnerability; and her external commerce, a commerce essentially maritime, would be in the highest degree vulnerable in a naval war.

In discussing the probable incidents of a war between England and Germany M. Touchard gives a careful analysis of the fleets of the two countries and describes the conditions under which a German invasion of England is conceivable. He directs attention to the weak points on the eastern coast of Britain, and he also considers the possibility of a blockade by England of the ports of Germany. The involving of France in the conflict would, by reason of an Anglo-French alliance, admit the possibility of the debarkation of an English army at Calais. On the part of Germany, it is doubtful whether the territorial integrity of Belgium, Holland, and Denmark would be respected. With reference to the attitude of France in presence of an Anglo-German conflict M. Touchard observes:

In this Europe in arms, where the state of

equilibrium is no longer peace, nor even armed peace, but the hope or expectation of war, in presence of a growing antagonism, it is necessary for us to choose between British imperialism and German imperialism. The adversaries are worthy of one another, and their chances are equal. Whoever has visited the industrial cities of the Rhine basin, the enormous entrepôts of the North Sea, must have carried away a troubled impression of prodigious, exuberant wealth, of strength at once inquiet and overwhelming, of a rude Germany thrusting aside all obstacles from its path. . . . But not less striking and more precise is the impression of strength,—well-ordered, tranquil, and sure of itself,—imposed by a consideration of English conditions.

Between these two adversaries France cannot remain neutral.

Not being for Germany, we are necessarily against her, independently of all the *ententes* and all the alliances; for it is not solely the military prowess of England that she would lay low, but, above all, she seeks to destroy the guarantee of Belgian neutrality. And it is this which expresses the Sibylline proposition of which we now hold the key: "The defeat of France puts England at our mercy. . . ." Should the day come when England must answer this question of life and death,—arrest-

ing that expansion which Germany must maintain at all cost in order to subsist,—she may destroy the navy of her rival, paralyze her merchant marine, blockade her coasts, annihilate her external commerce, and inflict a dangerous, if not mortal, wound, and Germany will be unable to oppose anything decisive against her British adversary; for the actual disproportion between the naval forces of the two nations England will continue to maintain.

What Germany needs, in order to be able to strike her enemy, is "to eliminate almost completely the element 'sea' from her strategic operations, and to throw into the balance integrally her formidable military power. She needs, to this end . . . the Batavian littoral, Belgian ports, Antwerp."

Above all, Antwerp, with its impregnable intrenched camp, the strongest in Europe, its immense and secure harbor, the mouths of the Scheldt plunging their menace as far as the estuary of the Thames; Antwerp, "the pistol leveled at the heart of England."

M. Touchard laconically adds: "There is but one road from Berlin to Antwerp, and this road runs through Paris."

THE UNITED STATES AND PAN-AMERICANISM— A FRENCH VIEW.

THE fourth Pan-American Congress is to be held next year at Buenos Aires, where it will coincide with the fêtes which the Argentine Republic proposes to hold in celebration of the centenary of the revolution which resulted in the emancipation of South America. Apropos of this congress M. Vialate, in the *Revue des Deux Mondes*, presents a French view of the policy of the United States Government toward the republics of the southern continent. Referring to J. G. Blaine (whom he describes as "brilliant and original, ambitious, and confident in the destinies of his country") as "the champion of a Pan-American policy," he gives an account of the first "International American Conference," at which Blaine presided, and which opened at Washington on October 2, 1889; deals with the events following the war with Spain, the occupation of Cuba, and the annexation of Porto Rico, Hawaii, and the Philippines, "which placed the United States in a delicate position with regard to the Latin-American nations, by whom American Imperialism (*l'imperialisme yankee*) was coolly received"; and narrates

the efforts of President McKinley in connection with the second conference, which, "after sufficiently serious difficulties," convened at Mexico City on October 22, 1901.

According to this French writer "the South American governments were not enthusiastic over the second conference, and public opinion was generally hostile to it. In the United States it was regarded with indifference," for "attention was being concentrated on markets for exports, and these were not sought in the New World but in the Far East." Expectations ran high:

Trade with China and Japan seemed to the Americans to promise an inexhaustible source of profit. The farmers of the West dreamed of substituting among these peoples the use of wheat for that of rice. The manufacturers of the Eastern States saw in these Oriental markets marvelous outlets for their exports for an indefinite period. The Panama Canal would counterbalance the advantages which that of Suez gave to their European competitors. . . . The acquisition of the Philippines added to these hopes. There Americans saw a fruitful field of activity, and Manila was to be a future seat of a commercial emporium in these distant seas: its importance would soon exceed that of Hongkong. . . . Statistics seemed to prove

that in these anticipations there was nothing chimerical.

But these desires for commercial expansion were hindered by unexpected obstacles. Though American exports to Japan and China had in 1905 attained respectively \$52,000,000 and \$56,000,000, these figures were really not so satisfactory as they appeared on the surface. For example, three-fifths of the exports to Japan were composed of alimentary products, petroleum, and raw materials, and the greater part of the manufactured products were machines destined for use in the growing factories and foundries of the Japanese. The empire of the Mikado was itself ambitious to become a great industrial power. Then there was the Chinese boycott, which showed that "the citizens of the flowery kingdom possessed efficacious means of retaliation." As regards the Philippines, American capitalists were backward in investing; for it was found that "the islands, ruined by the maladministration of the Spaniard, did not offer the rich market that had been anticipated." The spell which the Orient had exercised on the American commercial mind was broken; and "manufacturers and others asked themselves whether it would not be wise to seek other markets. Naturally their thoughts turned to Latin-America."

The total imports of these countries had increased from \$508,500,000 in 1887 to more than \$660,000,000 in 1904; and of this sum the importations from the United States did not reach one-fourth. While the United States furnished 46.15 per cent. of Mexico's imports, of the total imports of the South American countries the United States contributed but 13.26 per cent. Here was a market of 45,000,000 inhabitants completely neglected. . . . Was it wise to leave the development of these lands to the Old World? There was, besides the commercial danger, a political one. What would become, under such conditions, of the boasted predominance of the American Union in the New World?

Touching upon the Venezuela episode, the occupation, evacuation, and reoccupation of Cuba, M. Viallate proceeds to treat of the third Pan-American Congress, held at Rio de Janeiro in July, 1908, and at which nineteen republics of the New World were represented. He describes the work of the congress as "modest in extent," although the "laborious sessions lasted more than a month." One of the principal votes was that reorganizing the Bureau of the American Republics. On the occasion of laying the foundation-stone of the building to serve

as a new home for the Bureau President Roosevelt said:

This is a memorable event for all the nations of the western hemisphere. The edifice of which we lay the first stone to-day bears witness to the increasing sense of the solidarity of interests existing among all the peoples of the New World. It is a proof that we recognize the necessity of uniting more closely the republics of the western hemisphere by the friendly bonds of mutual justice, of reciprocal good-will, and of a sympathetic comprehension.

A CRITICAL TIME.

Commenting on this, M. Viallate remarks that "the ambition of the Americans to exercise a hegemony, at least moral if not material, over the nations of the New World is regarded by the latter as a sort of right of primogeniture." But he adds, "circumstances have not yet permitted the United States to fill the rôle which it regarded both glorious and profitable." Meanwhile the South American republics have made progress. "A new era is opened to them, capital and immigration from the Old World pouring in upon them." This happy condition of things, however, "renders singularly pressing the realization of the designs of the United States." To quote Mr. John Barrett, for many years a resident diplomat in Latin America and now Director of the Bureau of the American Republics:

To say that we have arrived at a critical moment for North American prestige and commerce in Central and South America is not the declaration of an alarmist or a pessimist. Never have the nations of Europe made such efforts to develop their commerce and prestige in these countries as they are now doing. Moreover, it would be useless to deny that a considerable portion of Latin America manifests to-day a greater sympathy for the friendship and the commerce of Europe than for those of the United States.

M. Viallate says further:

In spite of the precautions of American diplomacy, prejudice and distrust toward the United States persist among the South American peoples. Too long the Yankees [this word is the author's] there have been treated with disdain. . . . On the morrow of the last conference a Buenos Aires journal said: "As regards the delegates, the public, the foreigners, the conference at Rio de Janeiro was only one of brother enemies."

He thinks the American Government will persevere in the course it has mapped out, and that ultimate success is not impossible. President Taft will pursue the policy of his predecessor, and he will have a powerful aid in Senator Elihu Root.

THE GERMAN KAISER'S "AMAZING PERSONALITY."

UNDER the laconic heading "S. M.," Mr. George Sylvester Viereck, the young German-American dramatist and poet, gives in the *Mirror* a sketch, amusing, analytical, and critical, of Kaiser Wilhelm II. "S. M." stands for *Seine Majestät* (His Majesty), as Germans call their Emperor, "when they speak of him unofficially." S. M. is perhaps "the greatest contemporaneous figure; surely the greatest riddle. The Sphinx is easier to understand than the Kaiser; and woman is an open book as compared with him."

And it really isn't difficult for the Sphinx to be mysterious. Its greatest mystery is its silence. But the Kaiser isn't silent. He makes speeches. Many of them. Even grants interviews. And still leaves us puzzled. There has never been anything like it. He reconciles in his person the most incongruous traits. He is the most impulsive of reigning monarchs. There can be no doubt about that. Yet he is almost Machiavellian in premeditation. That telegram to Kruger was impulsive, yet carefully calculated, and prepared at the Foreign Office! Shrewd observers say that the historical interview in the London *Daily Telegraph* had been no less carefully launched. And that the hubbub attendant upon its publication furthered some far-seeing plan. At the time, it will be remembered, a cyclone broke loose in German editorial ink-spots. And, behold! William, the imperious, humbly bowed his head! Perhaps he smiled to himself somewhat sadly. But he said nothing. . . . And then, suddenly, it began to dawn upon Germany that the Kaiser's gravest indiscretions are often his shrewdest coups.

There is nothing hypocritical about the Kaiser. But there is no explanation. He has to be accepted as "two distinct personalities."

He is monarchical to the bone. Yet it was he who opposed Bismarck's anti-Social legislation. He is the official head of the Protestant Church in Prussia, yet Roman ritual and Rome possess for him a strange fascination. He loves pomp, but his children are reared with bourgeois simplicity. His preoccupation is war; he, nevertheless, is the staunchest champion of peace. He hates the English, and he loves the English. He is a mystic and a rationalist. His inclinations are medieval, but he knows more about the technical intricacies of a modern gun-boat than his own engineers. He would be capable of restoring an ancient castle, famed of minnesingers, and of establishing wireless telephony on its ramparts. He is the only man who could do this without being absurd. Because he is the legitimate offspring of Romanticism and Modernity. Of his two natures, one

belongs to the Twentieth Century. One to the Middle Ages. One is despotic. One democratic. One hates the English. One loves them. One talks freely, perhaps too freely. One is silent as the sepulcher. And secretive as the Inquisition. Peace lights on his right. Hounds of war are leashed to his left. There are two Kaisers, both of whom labor for the benefit of the realm, each in his separate way, unconscious of heterogeneous intention.

On account of this heterogeneity Mr. Viereck considers William II. "the authentic exponent of modern Europe." "Most modern monarchs," he says, "compromise either too much or too little."

The English King is a figure-head. Great Britain has finally disposed of the divine right of kings, the only logical basis of kingship. Edward is king in name only. The Czar, on the other hand, stubbornly refuses all concessions and lives in constant dread of poison and nitro-glycerin protests. It is all a question of readjustment between the passing order and the new order. Even the Turk struggles with it. Abdul Hamid was up against it. He found no solution, and the monster hurled him into the abyss. The giant Modernity everywhere shakes his fist against the lavendered glory of medieval tradition, but has not overcome it. It is still part of our lives. William II. is the living incarnation of this great contradiction. He is logical, because he is illogical. He is the only logical monarch in Europe. He is an ideal Kaiser. He is in tune with the *Zeitgeist*. If Germany were to be declared a republic to-day, and a president had to be chosen, the unanimous choice of the people would be William II.

America could never have produced William II., because it "lacks the glamour of the Middle Ages." The Kaiser has sometimes been compared to ex-President Roosevelt; but to do so is "like comparing a phonograph to a nightingale. It may imitate the nightingale bravely, but there is something missing."

Not only as a ruler is William II. remarkable. He is also a genius. As one of his friends said of him: "William would have been conspicuous in any profession. If a cobbler, he would have been a master cobbler. He is, as it were, many things: strategist, poet, musician, general, diplomatist, huntsman, painter, engineer."

Nero tried his hand at some of these things. But it cost him his life. Frederick the Great dabbled in verse. But it was wretched verse. The Kaiser's endeavors in manifold fields would have made reputations for men of lesser caliber. But he still remains, above all, the Kaiser. . . .

The luminous figure of William II. dominates the earth. The shadow of his sword makes Britons tremble. But, unlike Frederick the Great, William the Great has accomplished his victories without bloodshed. For one and twenty years he has been Lord of Peace. The Seven Years' War was surely a wonderful thing. But what shall we say of a three times Seven Years' Peace?

According to Mr. Viereck, Germany is divided into two camps: "those who follow the Kaiser blindly and those who oppose him blindly."

The Kaiser's personal charm is more potent than that of Circe. Unlike Circe, he turns his admirers not into swine, but into patriots. Like Julius Cæsar, William II. can be all things to all men. He is a brilliant conversationalist, and as he listens to you he seems to enter into your mind. Yet all the while the portals to his mind are guarded. That, I believe, is the secret of rulers of men. It is incredible what sacrifices Germans, hard men of business, will not make for one smile from his imperial lips. There is August Scherl. Runs a chain of newspapers. Got the trick over here. Publishes the *Lokal-anzeiger*. Formerly ultra-yellow. Suddenly reversed policy. Deliberately made it politically the dullest paper in Berlin. Merely because S. M. is said to read it! So as not to offend the Sovereign. There was no diminution in circulation. Suppressing its yawns Berlin religiously peruses the *Lokal-anzeiger's* castrated

pages. "You see," Germans explain, half apologetically, half with the pardonable pride of sharing, in a sense, the mental pabulum of their ruler, "S. M. reads it. I. M. (*Ihre Majestät*), Her Majesty, also." And yet it is all a myth. I don't say that the Kaiser never reads the *Lokal-anzeiger*. But he reads many papers. His desk is strewn with a bewildering variety of them. And with all the new magazines. Sometimes, no doubt he even sees the *Vorwärts*, Bebel's radical mouthpiece. It is all nonsense, of course, that his news-dispatches are "doctored." William II. wouldn't stand for that. He picks up information wherever he likes. But being a busy man, he has his news "Romeiked," to employ a new verb, coined, I believe, by Richard Le Gallienne. The *Wilhelmsstrasse* supplies him regularly with clippings on every imaginable topic of interest. And finally the *Fürstenkorrespondenz*, a sort of *Digest* for Princes, supplies him with the epitome of the daily news and excerpts from editorials.

William II., like Frederick the Great in his time, is "the cynosure of the world. His seal is graven upon the book of life perhaps more deeply than Bismarck's. . . ." And if there is bitterness in his heart when he remembers the immediate past, and Germany "has forgotten how in a moment of hysterical agitation she trod his love under foot," William II. is great enough to forget also.

POPE PIUS X. AT HOME.

M. RENE LARA contributes to the *Fortnightly Review* a most interesting account of his reception by the Pope in the Vatican. To this he adds a study of the Pope's policy and a description of how he spends his day.

M. Lara says:

Rising at five o'clock, Pius X. is found by the dawn, as of yore, in his oratory, where every morning he says mass, served by his private secretary, Monsignor Bressan. Then, after an early cup of coffee and milk, come reading and correspondence, followed by a short walk in the lonely garden. Receptions and audiences, the reading of reports, interrupted by a frugal meal at noon, fill up the monotony of the long, cloistered days. And, again as of yore, when the day is waning and the church bells ring the evening Angelus, Pius X., like the apostles before him, summons two of the faithful whom devotion or employment brings to the Vatican and speaks a kind word to them, thus literally fulfilling the precepts of St. Paul to become "all things to all men, so that all may be gained over to Christ."

M. Lara thus describes the Pope as he found him in his room:

Behind a table loaded with papers, beside a crucifix hung high up on the wall and slanting, so that it seems to bend its look of pain upon him, I see His Holiness Pius X. standing erect in the imposing purity of his white cassock.

His strongly marked features are plainly defined in the broad light. The stature is powerful, the shoulders broad, the chin masterful, the mouth singularly expressive; but the gentleness of the glance, the crystal clearness of the kindly eyes soften the haughty outline. A plentiful crown of ash-colored hair encircles the little white silk skull-cap which the Sovereign Pontiff wears thrust on the back of his head; his plump and energetic hands are beautifully shaped; his voice is grave, sonorous, and distinct. His friendly simplicity,—I was almost saying his cordiality,—at once puts you at your ease.

With a simple gesture of the hand he invites my wife and me to take a seat on either side of him. He himself has sat down in a wide arm-chair in front of his desk, and, while speaking, with one hand he alternately takes up and lays down the gold penholder that lies beside the ink-stand and with the other plays with the gold chain that hangs from his neck and supports a pectoral cross in emeralds,—a present from the Emperor William to Leo XIII. on his jubilee,—the green reflections of which sparkle in the rays of the sun.

Speaking of the time when he left Venice to attend the conclave that elected him, the Pope mentioned, with a smile, his purchase of a return ticket:

"So little did I think that I should never see Venice again that I took a *biglietto d'andata e ritorno*."

He long kept this return ticket. Wealthy collectors strove by every means in their power to become its purchaser . . . he invariably refused. Last year the King of Greece, in the course of a visit which he paid to the Pope, expressed a keen desire to possess this little piece of cardboard which has become for all time historical,—and the Pope gave it to him.

On the other hand, there is one humble relic with which nothing will ever induce him to part. This relic is his watch, a little cheap nickel watch.

"It marked the minutes of my mother's death-struggles," he says, "and the hour of my definite separation from the outer world, from space and liberty. It has marked all the sad, all the joyous, all the solemn moments of my life. What jewel could be more precious to me?"

He carries it fastened to a white silk cord in the broad sash which he wears round his waist; and he did not hesitate to offend against the etiquette which hitherto had obliged the Pope, when he wished to know the time, to apply to one of his prelates in waiting.

THE RISE AND FALL OF THE SPANISH MARINE.

NOT only on the unrivaled greatness of her naval power but on the excellence of her maritime laws, her merchant fleet, and her command of the routes of trade did Spain once found her claim for supremacy among the maritime nations is the contention of Señor Francisco Espinosa y Gonzales-Perez, writing in *España Moderna* for July. Her early laws on the subject were so excellent that other nations were only too glad to follow where they could not lead.

Our maritime legislation during the Middle Ages furnished a model of such complete perfection that it was copied by other states, while even to-day the best and highest of legislation regarding naval construction, navigation, or imposts finds its precedent with us as early as the thirteenth century.

At that time Catalanian ships frequented the ports of the Levant, Egypt, and the Berber, and in the sixteenth century Spain was the first mercantile power of the world. More than one thousand ships constituted her merchant marine, and no other nation could equal it. The Republic of Holland did not exist; England did not dream of ruling the seas until the reign of Elizabeth; the rise of the Hanse towns had not yet taken place; France had neglected the great navy that had been created by the great minister Colbert; only Portugal could vie with Spain. Yet already there were noticeable the germs of future decay in the decline or sacrifice of the once most powerful maritime state of the nation,—Catalonia, with Barcelona at its head. This state, though under the suzerainty of the Spanish crown, continued in many respects to maintain its former independence. It refused to submit to the ordinary imposts levied upon the less privileged kingdoms be-

longing to the Spanish crown. It therefore remained cut off from the benefits which they enjoyed, while other circumstances hastened its decline. In 1498 Vasco de Gama opened the new all-sea route to the Orient, coincident with the closing of the land routes by Selim I., conqueror of Egypt. Compensation for the lost Oriental trade by participation in the American trade was selfishly prevented by the more powerful state of Castile.

Soon after the disaster to the invincible Armada the navy began to decline rapidly, in spite of the efforts of Philip III. In 1656 it was reduced to six unseaworthy ships, as contrasted with the 130 vessels of the great Armada. Charles II. found himself constrained, in order that the business of the realm might not be brought to a stop, to rent vessels from Genoese merchants. English and Dutch ships crossed the seas, continually molesting commerce, capturing galleons that came from America, and constantly menacing Spanish dominions in the East and West Indies. Spain possessed excellent building yards, abundant wood, iron, resin, etc., for the building of ships, but many causes prevented the growth of her mercantile marine. The efforts of the Bourbon rulers to restore the navy failed on account of their inclination to copy former methods rather than to plan new ones. A supererogation of protective legislation only defeated their own end, added to the difficulties, and hastened the fall of the Spanish marine. In 1720 it was ordered that all grain carried in Spanish vessels should command a market price one-fifth higher than that transported in foreign bottoms. Nevertheless the market price at once became lower. Other nations overran the seas with entire liberty, thus effecting a sav-

ing of time and money, to the end that their freights became cheaper. Furthermore, Spanish vessels, acting always on the defensive, must go heavily armed and carefully guarded. In this way a confusion of the concept of a navy and that of a merchant marine arose. The shipping belonging to the class of neither one failed to fulfill the functions of either.

Finally, by the eighteenth century, almost all the maritime commerce of Spain and her colonies was in the hands of foreigners. Over a thousand Dutch and English vessels engaged in the trade, in spite of laws intended to reserve all the benefits to Spaniards.

At this time the terrors and ravages of the Mediterranean pirates at last accomplished the complete ruin of mercantile enterprise. The coasts of the nation were overrun by

hoards of cut-throats; citizens were sold into slavery, even the very life of the nation was threatened. Sporadic reform became a necessity.

Alberoni surprised Europe with a powerful fleet that served for the moment to win Corsica and Sardinia, but the merchant marine was lacking. The victory could not be sustained, and in consequence the wounds suffered by the country were severe. Again during the eighteenth century Patino and Ansenada instituted a powerful navy, which has been called "the strongest ever owned by Spain." It consisted of 304 vessels. But again the lack of a merchant marine caused "the most earnest attempt at rehabilitation" that Spain has yet made to come to nothing.

But not until the ninety-eighth year of the nineteenth century did our devoted navy receive its death blow, when the relics of our power and traditions were laid at rest in the waters of Cavité and Santiago de Cuba.

THE COMMERCIAL "FAILURES" OF THE UNITED STATES IN THE PACIFIC.

THE immense and swift development of the Japanese East-Asiatic shipping trade is one more link in the chain of surprises which the "land of the rising sun" has recently given to the world. The fact of her having in such great measure crowded out other nations in this line and the reasons of her success are clearly and circumstantially set forth by Dr. Ernst Schultze in a recent issue of the *Preussische Jahrbücher*. The decline of the East-Asiatic trade of the United States in the last years has been most striking; the causes that induced it are convincingly brought out by the writer. He says:

The intense optimism of the people of the United States led them for a time to paint the future in such rosy colors that a check to the mighty strides their country was making seemed impossible. They dreamed not alone of an economic conquest of Europe but that the East-Asiatic nations would become wholly dependent, economically, upon the United States. The prolonged boycott of American goods in China in 1905 was the first great disappointment. Directly upon this followed the difficulties with the Japanese consequent upon the reckless enmity displayed in California and other Western States. These were, it is true, smoothed over through skillful diplomatic negotiations; and by sending the American fleet to East Asia it was thought that the Japanese would be so impressed that no further difficulties would have to be feared. But this assumption has proved deceptive. What, however, has perhaps a still more depressing effect in the United States is the fact that the

traffic between the United States and East Asia, from which American shipping expected to reap great benefits, is being transferred with marvelous rapidity and irresistible force into the hands of the Japanese.

The plan of enlarging the compass of the American shipping trade with East Asia was specially promoted by J. J. Hill, the most energetic and ablest of the American railroad kings, and was also advanced by his rival, Harriman, says this writer.

Already as a boy the former had dreamed of the economic opening of the Orient. When, after the restless labor of decades, he had completed the three great railway lines which helped to people and develop the Northwest he reverted to his youthful dreams. He wished, above all, to find a market for American wheat in over-populated Japan. His idea was to furnish the millions of the Orient with wheat which would be as cheap as rice.

In order to carry out his far-reaching plans, he induced a Japanese steamboat company to send its ships to Seattle. Subsequently he himself had two giant vessels built for the Pacific trade. He succeeded, too, in procuring for American industry the first Japanese order for rails and cotton. After long negotiations, the first load of American wheat flour was sent, by way of experiment, to China. Soon 150 to 200,000 tons of flour were annually exported to East Asia, while the yearly export of cotton to Japan amounts to 166 million pounds.

But "a great crack has appeared in this fine edifice that J. J. Hill so eagerly wished to construct."

The export of wheat flour is diminishing,—nay, it is exceeded by the import of Japanese food products. The export of cotton goods from the United States diminished by more than half from 1906 to 1907. And this decline is due solely to the collapse of the American cotton trade with China. The Chinese, owing to the bad treatment of their people in the United States, have refrained as far as possible from purchasing American cotton, so that the imports, which in 1906 amounted to 29.6 million dollars, had sunk in 1907 to 5.7 millions.

The cause of this phenomenon is hardly to be sought in a permanent decline of American traffic with East Asia, this writer believes, which if looked at in the aggregate for a number of years has had a normal development.

But it is an unmistakable fact that the shipping-trade in the Pacific Ocean is discarding all other flags with torrent swiftness and is turning to that of Japan. Until now the forwarding of freight between North America and East Asia has been carried on by three groups,—the American vessels, running at regular times; the English tramp-ships, running at irregular intervals; and the Japanese lines, which, like the American ones, had definite sailing-dates. Now, however, the first group can no longer stand the competition, while the second realizes some profit, now as before, it being regarded as a merely incidental matter.

The other American companies engaged in East-Asiatic traffic besides the steamers of the Hill railway lines, the writer reminds us, are the Pacific Mail, the Boston Steamship Company, and the fleet of the Canadian Pacific Railroad. So far the tonnage of the vessels sailing under the flag of the Union exceeds that of any other nation trading between North America and East Asia.

But the fact remains that all the freight shipped from the American Pacific ports to East Asia can be forwarded more reasonably by the English tramp-ships, of which there are about a dozen, or by the Japanese steamers, than the giant steamers of the United States can afford to transport it. If they do it anyhow it is with a heavy loss. A modest gain might be made by getting the goods from the eastern section with special rates on Hill's railroads; which, however, would be granted only in case they were to go on a Hill steamer. The same is true of Harriman and his Southern Pacific Railway. The Hill freight agencies in the eastern section of the United States have a bitter struggle with the shipping lines which carry the freight from New York through the Suez Canal. The latter have a double advantage, because it has been customary to convey all freight to East Asia by this route and because the chief exports from the United States to that part of the world consist,—outside of raw cotton,—of articles manufactured in the industrially advanced section of the country,—the Northeast. About the only commodities, therefore, which the West regularly ships are petroleum and wheat flour. As has

been mentioned, the quantity of the latter is not considerable. Petroleum is sent to East Asia either as crude oil or after it has been refined in San Francisco. But what renders the competition of the American Pacific lines with those going over the Suez Canal specially onerous is a new railroad law which compels the railway companies to publish a lowering of freight rates three days and an increase ten days in advance. As this does not affect the lines going by the Suez Canal route the American Pacific shipping trade is severely handicapped. The railroads are, besides, compelled to state in taking over freight how much of the expense is for shipping and how much for railroad transit, and it is a painful fact for those on the Pacific that the former means of transportation is much cheaper.

All this, however, would not lead to the "indubitable ruin of the American shipping trade in the Pacific Ocean" if the sharp competition of the Japanese were not a factor in the case.

They, however, snatch away one portion of the shipping-trade after the other. They have even succeeded in crowding out the most noted English steamship line, the Peninsular & Oriental Company, from East-Asiatic traffic. For fifty years did this English line successfully carry on trade in the East, but now it frankly admits that it is being steadily driven out by Japanese shipping. How has the Japanese merchant marine been able to attain such successes? But fifteen years ago, outside of the paltry "sampans" used only in coast-trade, they had scarcely any merchant vessels. The policy of exclusion so religiously followed for three centuries had totally ruined Japanese shipping. It is only in the last twelve years that Japan has sent her ships to China, India, Australia, England, and America. The coastwise trade of East Asia is almost exclusively carried on by the Japanese lines, which send out their vessels at least once a week. The ship-subsidies granted by the Japanese Government have contributed greatly to this rapid development. But it must be borne in mind that the government was in a large measure forced into this policy; so many steamers were acquired in the war with Russia and so much capital had been expended upon them that some use had to be found for them after the war; and added to them were the captured vessels. That for the rest the Japanese would be able to develop a shipping of the present magnitude they themselves would likely have doubted as late as ten years ago. Their ships were then commanded by white captains,—mostly Americans or Englishmen. The crew, too, were mostly Americans, only secondarily Japanese or Chinese. To-day officers and crew of the two greatest Japanese marine companies are almost exclusively Japanese or Chinese. The pay of the yellow sailors is notoriously very much lower than that of the whites, while their board, too, is far less expensive. In addition to this, shipbuilding is much cheaper in Japan than in America, even overlooking the fact that the shipyards also receive government aid. But wages are materially lower in Japan than in North America; while wood, which is still the most indispensable material for ships,

is considerably cheaper than in the United States. For Japan still possesses 20 million hectares of well-cultivated forests, while the United States, though still in command of stately stretches of woodland, has suffered frightfully through the irresponsible devastation which has been going on for decades.

What the Japanese did not until recently possess and had to purchase at high rates from abroad were marine-engines, steel-plates, rivets, etc. But the government has established large work-shops in order that such things, too, may be furnished at home as far as possible. Thus Japanese shipping in the Pacific is steadily undermining not only American but European shipping also. The tonnage of their merchant marine rose from 477,430 tons in 1898 to 1,115,880 tons in 1907.

The prospects of American shipping in the Pacific are considered poor.

It is perhaps not looking at the matter too darkly to predict its entire extinction. The high protective tariff in the United States, though it has brought considerable riches to the country, has sadly crippled the competing power of their

manufactories and shipping. The entire economic life in the United States is to-day based upon such high wages that in a case where the protective tariff is ineffectual,—as in the sphere of shipbuilding,—that country must succumb in opposition with other States. The United States has, therefore, but one ray of hope. The economic policy of Japan does not rest upon an altogether solid basis. The government subsidies granted to navigation-companies, wharves, factories, etc., may lend these a passing brilliance, but cannot make them lastingly strong. The war with Russia inflicted deep financial wounds upon the country which will not be healed for many years to come. Poverty increases in the land, although wages in many branches are rising. Expert work the factories of Japan can for the present produce only in exceptional instances. It is not impossible,—rather indeed likely,—that they will attain that too. Wages, however, will then doubtless rise also; and with that a part of the "yellow peril" will disappear, through which American shipping in the Pacific is now so heavy a sufferer. But whether developments will assume this shape and how long a time they will need no one can at present foretell.

SOME FACTS ABOUT LEPROSY.

"WHO shall decide, when doctors disagree?" is a query that naturally suggests itself when one thinks of the case of Early, the man who, after having been quarantined on suspicion of being a leper for nearly a year by the Health Commissioner of Washington, was sent to New York in a baggage car and was soon afterward discharged from the New York Skin and Cancer Hospital because he had no symptoms of leprosy. Commenting on this case in the *Medical Record* (New York), the well-known specialist in skin diseases, Dr. L. Duncan Bulkley, who is physician to that hospital, presents some interesting facts for the benefit not only of "the public at large" but also for "those in the profession who possibly may not yet have perfectly clear ideas on the subject." The reference to leprosy in the Bible, and in certain popular works of fiction, such as "Ben Hur," have engendered a great dread of the disease; on the other hand, "there has been very little said or done to check or lessen the popular prejudice in this direction, which has been too often shared by physicians, who, not having devoted special attention to the matter, accept thoughtlessly the general verdict."

According to Dr. Bulkley, although the word "leprosy" strikes more terror "into the heart of its victim, or suspected victim,

and also into the mind of the average layman, or even physician, than that of almost any other disease known," yet to those who are well informed "it bears no comparison to either cancer or tuberculosis in the mental distress which it should cause in those afflicted, while syphilis and many other diseases should inspire far more dread of contagion." Prolonged and careful study of Leviticus xiii. and xiv. has convinced the scientists that what is now known to the medical profession as leprosy was "not included in the description given" in the Biblical references to that disease. In other words, *lepra*, or *elephantiasis Græcorum*, is not "the leprosy of the Bible." Formerly *lepra* was "a common designation for psoriasis," and this latter is probably the disease referred to in the Biblical expression "a leper as white as snow," as neither tubercular nor macular leprosy "ever presents a white diseased surface."

It is not generally known that, "in the climate of America at least, leprosy is really a harmless affection to those who come in contact with it." Dr. Bulkley cites Dr. William H. Welch, of Johns Hopkins Hospital, who, in reference to the Early case, recently remarked: "Leprosy is practically the least contagious of all the infectious diseases." Many years ago the Leprosy Committee of

the Royal College of Physicians of London reported that "the all but unanimous conviction of the most experienced observers in different parts of the world is quite opposed to the belief that leprosy is contagious or communicable by proximity or contact with the disease." The most striking testimony to the non-contagiousness of leprosy, however, is furnished by the experiences of those who have worked in leper settlements. Father Clement, for instance, whose death was reported a few months ago from Honolulu, had worked for forty-six years among the lepers on Molokai. Though in constant contact with lepers, he "finally died of other cause, without having contracted the disease." Similar testimony is given by Dr. Beaven Rake, medical superintendent of the Trinidad Leper Asylum, who writes:

The sisters [Dominican nuns who have nursed at the Asylum since 1868] are in daily contact with the patients, washing their sores, applying poultices, and bandaging their crippled limbs; yet no sister, nor any other of the attendants, has yet developed the disease.

Dr. Van Allen, of the leper hospital in Madras, India, which cares for 150 lepers, says "none of the dressers who freely handle even ulcerated surfaces have contracted the disease." In Norway, lepers are permitted to dwell in their own houses, if they desire to do so.

Leprosy not being contractible by contagion or contact, how is it acquired? This question remains unanswered; "for neither race, climate, soil, nor hygiene can be charged, so universally spread is the disease." Dr. Bulkley, however, evidently favors the "fish theory." He says:

For a great many years various observers have

claimed that there was the greatest probability that the disease was conveyed through fish, in some way or other . . . and in the light of modern knowledge regarding the conveyance of various diseases by means of lower animal life the theory would seem to have fresh scientific support. . . . I know that Mr. Hutchinson's continued and warm advocacy of the fish theory has been subjected to much ridicule and is not generally accepted; but to my mind it offers the most satisfactory solution of the problem. . . . Mr. Hutchinson's arguments in favor of the fish hypothesis are so clear and strong that I must give some of them, condensed:

"No other article of food can be mentioned which is in use in all leprosy districts. Most of the places where leprosy is prevalent are on the sea coast, and it is especially common on islands. Almost all the large fish-curing locations are the homes of leprosy, and it is often met with also in the countries to which their products are most freely exported. It is not necessary, of course, that a large quantity of fish be eaten, for the smallest portion, if it contains the germ, can introduce the disease. Thorough cooking of fresh fish probably destroys its power of communicating leprosy, if it chance to be infected, but it is known that fish are often eaten raw, or improperly cooked, and also that very large quantities of dried fish are consumed throughout the world."

As an example of a possible means of conveyance, Dr. Bulkley points to caviar, which is always eaten uncooked; and he asks: "If the raw oyster can be the means of communicating typhoid fever, what is there unreasonable in believing that fish, under certain circumstances, can introduce leprosy?" Mr. Hutchinson not long ago "made an extensive trip to countries where leprosy is endemic, and was more than ever convinced of the truth of the fish hypothesis." Dr. Bulkley himself thinks that "there is certainly enough reasonableness in the theory to warrant careful scientific inquiry along modern lines of bacterial research."

THE "PRACTICAL UTILIZATION" OF THE POLAR REGIONS.

PROF. OTTO NORDENSKJOLD, a noted arctic explorer, writing in the *Deutsche Revue*, gives an informing and interesting view of the polar regions, their animal life, scenery, the way they are and have been exploited, and how they ought really to be utilized, etc. Spitzbergen, in particular, occupies his attention; interest in that island has recently been revived through the prospect of utilizing the coal-fields; besides, its peculiar scenic beauties attract many tour-

ists, who, with our present traveling facilities, can make the journey both comfortably and safely.

It is a peculiar phenomenon that the cold and coldest seas actually harbor more life than the warmer ones. We know that the polar waters abound in fish. The great fish sites on the coast of Norway, Iceland, and Newfoundland are not, it is true, arctic regions, but they are nearly so. In the cold seas, too, we find in greater abundance than elsewhere the giants of the present animal world,—whales; and a great number of

varieties of these creatures are either wholly polar or are at least most frequently met in the moderately cold seas. Seals, too, may be termed arctic animals; not a single species of these is found in the waters of warmer regions. And, finally, it is the rich faunal life of the seas that furnishes sustenance to the countless flocks of sea-birds inhabiting the arctic coasts.

If the polar seas teem with life, the same cannot be said of the polar lands, and until very recently they served men, and birds and seals as well, chiefly as a foothold for utilizing the products of the sea.

In our times repeated expeditions with purely ideal aims have been undertaken to these lonely, cold lands, and a more recent phenomenon is the host of tourists who repair in summer to certain arctic regions; but after all it was practical ends that first and foremost enticed people to those lands.

Spitzbergen is of all polar lands the one that has from the oldest to the present time elicited the most attention. Although in the very heart of the arctic regions, this island group lies quite near Europe and the Gulf Stream makes it much more accessible than any other islands in the northern zone. Its history, too, offers far greater interest than that of other polar countries. Says this writer:

Although discovered by the Dutch in 1596 its real history dates from 1607, the time of the visit of Hudson, who first acquainted the world with the natural wealth of Spitzbergen. There were, first of all, the great, easily destroyed Greenland whales, with their abundance of blubber, which are so valuable even to-day. Then a veritable invasion followed; whole fleets gathered there, and localities were founded, some of which had several thousand inhabitants during the summer. This glory, however, lasted only about fifty years. The hard-pressed whales retreated to remoter parts and the seals were not valuable enough to entice such large numbers of people. Very lately hunting, now for the hump-back whale, from permanent bases, has flourished anew. But it almost seems as if this would not last, and it is very doubtful whether it is economically profitable. It appears as if instead a vast field in an entirely different arctic sphere were to be opened to-day for this sort of whale-capture, and that is the antarctic regions. . . . Since about ten years ago hunting whales from the southern point of South America has been resumed. Since they are very numerous in the Southern seas and permanent bases are scant, the danger of extinction is still remote there. The same may be said of the seals of the South.

Spitzbergen, this German writer reminds us, is a land without an owner, and laws for it would have to be enacted by international agreement. But the case is different with most of the other arctic and antarctic islands. The companies operating there from perma-

nent stations have consequently received Government concessions.

A quite different position from that of the arctic countries just under consideration is occupied by Greenland. The largest, and next to Spitzbergen, the most important and most discussed polar 'an-', it forms a very small continent, whose southern point projects into the temperate zone.

Mid a "splendidly wild nature," in a narrow strip lying between the greatest ice-mass of the northern hemisphere and an ocean almost ice-free for many months of the year, resides a group of the only polar people of the globe,—the Eskimos. Belonging to Denmark, really and not only in name, since for centuries competition from outside has been strictly debarred, the object of this seclusion has, indeed, been attained. Thanks to it, perhaps, the Eskimos continue to exist to-day; at any rate, they owe to it their comparatively pleasant mode of life. How far it has benefited them economically is a different question. At all events, the Danish Government has organized a special traffic with the natives, buying the products of the country in exchange for clothing, utensils, provisions, etc. The trade used to be quite profitable, but at present Denmark is a considerable loser.

The splendid white skin of the polar bear of Greenland, however, is a highly prized ornament; the skin of the arctic fox is still more so. Less valuable are the reindeer, but as they are found in large herds and their meat is edible, they, too, are profitable to the hunter. They and some other kinds of animals were eagerly hunted long after the golden days of the whale-hunt had ceased. Although at present the chase has considerably diminished, the hunt for the arctic fox and the collecting of eiderdown are still continued, while the polar bears and the walrus have shared the fate of the Greenland whale, and except in the extremest north are rare visitors to the coast.

Only a few years ago Spitzbergen aroused a general interest, and colonization has assumed a new phase. In the first place tourist-travel extends now to the remote polar islands: passage to strange lands is at present accomplished with a safety and ease undreamed of in former days.

The feeling alone that one is far removed from all civilization, from regions governed by the laws of human society, entirely alone with nature, has something alluring in it. And what a nature! Mighty mountain spurs, rising from their eternal mantles of ice; icy streams filling the valleys and projecting far into the ocean. Wondrously beautiful days, with the intense blue and white, when during the summer the sun never sets; while in contrast in the depths of the fiords often a smiling green on the mountain slopes. The immense flocks of the most varied sea-birds, the magnificent swarms of eider-ducks, the reindeer, which in spite of being hunted since centuries have not learned to fear man and shun him,—all this must involuntarily enchain the interest of every lover

of nature. Besides the beauties of nature and the animal world, Spitzbergen has a new attraction in its coal mines. Coal is found in great quantities, and is now readily accessible from the fiords. Its quality and the extent of the deposits have long been known, but the idea of utilizing it has been entertained only of late. The coal formation is recent and not of the best quality, but the greatest obstacle is offered by the polar conditions. Imagine a country shut off seven or eight months from the rest of the world, a night lasting three months, and the winter storms and cold of the polar regions!

Two aspects, then,—the accession of tour-

ists and the mining of coal,—have lately drawn attention to Spitzbergen so strongly that the situation has developed into a political question which must be solved by diplomacy. It is evident from what has already been said that if advancement proceeds as it has done some order must be introduced. Not a few nations, therefore, are turning their gaze upon Spitzbergen; and a diplomatic conference, it is stated, is to be held shortly to discuss Spitzbergen's future.

MAIN CURRENTS OF MODERN LITERATURE.

IF the modern novel be any index of what modern society really is then the price one has to pay for the moot advantage of being alive is, indeed, a heavy one. This is, briefly, the gist of a thoughtful paper contributed to *Etudes* (Paris) by M. Suau, who is not less interesting in his capacity as a critic because he happens to be a Jesuit. And though he confines his animadversions to current French literature, it would appear that they are applicable the whole literary world over, as far, at any rate, as the modern novel is concerned. Monsieur Suau divides modern novel-makers into three classes, namely, the happy-go-lucky (*insouciant*), the pessimist, and the spirited (*courageux*) or optimistic. Plunging boldly into the middle of matters, he has the following remarks to make anent the first mentioned:

The happy-go-lucky type of writer is, in my view, that one who seeks not to show that life has a real aim. To him it is simply existence to be played with and enjoyed without remorse, without regret and without any attempt at making any philosophical inquiry into its reason or nature. In his work there is a total absence of a moral sense. Openly and unblushingly he celebrates in his cynical and easy-going fashion the triumphs of instinct, while conscience is conspicuous altogether by its absence in the lives and deeds of the actors portrayed. The result is to raise up a generation of young people who have thrown aside all the old-fashioned virtues and who possess no more patriotism, religious beliefs, filial respect, regard for the home or regret for perishing ideals. Their sole aim in life is to realize whatever material profits the world can give them, and defeat in the eager struggle for the good things of the earth is the worst of all possible evils.

There is, according to this writer, much more hope, from the literary point of view, for the pessimists, although little can be said for their viewpoint of life, considered from a purely religious aspect. Says M. Suau:

The pessimistic literature of our age, if more dignified *qua* literature than the previous, seems to draw upon all that is ignoble and sordid and evil for its characterizations. Human misery, suffering, and death are its principal notes. It is in many cases a pretentious pose arising out of the writer's disillusion, his lack of faith, his personal immorality or his vanity. More perhaps than any one or anything else, these writers are responsible for much of the evil they see in life, and when disillusionment comes upon themselves they imagine that the sun has set for the rest of human kind. In particular has the naturalist school sought its inspirations in the wretchedness of the world. For them there is neither beauty nor heroism, to all and everything being applied the rule of the worst. Man is animal, and at his best and at his worst he always remains the animal. Consider Pierre Loti, for example, in *Matelot*, who preaches the vanity of all things in the following passage: "I believe in nothing and in nobody; I love nothing, I love nobody. This has been the result of twenty-seven years in the big world. I tried to be a Christian and could not. There is no God; there is no evil. There is nothing that is worthy of respect, and my heart is full of lassitude and bitterness."

Nevertheless, all is not lost. There is some hope in the fact that there exists a third and best type of literature which our Frenchman calls the "spirited." He says:

There is fortunately a class of literary men who endeavor to show mankind what beauty and good there lies in simple effort which is unmindful of merely material success. To show that life is a tremendously serious affair, that man has a task to accomplish here below, that the spirit of dilettantism is opposed to all proper conceptions of a well-ordered and full life, this is the duty such writers have put before them. Biography and not fiction has elected to play this rôle for the most part in the work of Barrès, for example, though some few romancers have given us constructive and uplifting work in the historical romance. The moral of such romances is that the world is not ugly and that life is not without its price.

FINANCE AND BUSINESS.

NOTES ON APPLIED ECONOMICS OF THE MONTH.

NATIONAL BANKS—THE INVESTOR.

LAST month appeared the answers made by national bank directors to a series of questions from the Comptroller of the Currency. The figures have caused some surprise, particularly to the thousands, among whom is a large proportion of women, who buy national bank stock as an investment.

Less than 13,000 out of 30,000 directors were willing to state for purposes of record that they were "familiar with the condition of the bank in all its details." Less than one out of three questioned stated that they were in the habit of approving the loans. Eighty-three per cent. answered that they were entirely unable to certify as to the genuineness of the commercial notes held by the bank. (Yet two dollars of every three loaned by national banks is represented by commercial "paper.")

Only 29 per cent. of the directors answering were in the habit of checking up the published report of the bank with the account books themselves. Finally, only a little over one-half were able to state that they had even read the national bank act or were familiar with its provisions!

Some of the failures of bank directors to direct are really unavoidable. Many of them are too engrossed with other affairs, or direct too many other banks, to check up and examine every merchant's or manufacturer's note held as an asset. But the Comptroller's questions have succeeded in showing the limits of the national bank examining system, at least. If the directors of an institution are not willing to say that the signatures of its borrowers are genuine, what can one expect from the hurried bank examiner who has two or three days to devote to the job?

It is all calculated to make the cautious-minded go on a hunt for something more than imposing names in the directorate before depositing money in a national bank or buying its stock. The essentials for success are two,—an open field and an experienced man. Many a small town is encumbered with three national banks where one would

do. And many a prosperous dry-goods merchant, farmer, or local manufacturer is acting as national bank president without the technical education, the knowledge of exchange and of investment conditions in different parts of this country and abroad, possessed and used by competitors.

"National bank stock" has such a solid, substantial sound to the investor that too often it is purchased without the little preliminary investigation that may make so much difference. When it is good it is, indeed, about the most nearly perfect security to put away and allow to grow for a period of years. But when the occasional trouble comes the stockholder is sometimes shocked to learn of his "double liability." The man who sold him the stock somehow did not mention or did not make clear that he might be called on for additional amounts up to \$100 a share in case the management of the bank needed the money to make good to creditors. And in despair the holders have very often refused to pay and have lost their interests in enterprises which quite often recover and become highly prosperous. Of the total assessments on national bank stockholders since 1865 of \$44,361,240, less than \$21,000,000 was actually paid in.

The right kind of national bank stock may pay a low dividend at first, but it has a way of growing. The 32 "national" members of the New York Clearing House have stock whose face value adds up only to \$111,400,000. But its present market value is nearly three and two-third times as much,—\$401,178,250. The average investor who bought these stocks at par can now get back \$360 for every \$100 put in,—not to mention the regular dividends received, in some cases as much as \$25 or \$30 a year.

NATIONAL BANKS—THE DEPOSITOR.

THE actual percentage of loss to those who deposit in national banks has been marvelously light. As compared with the more than \$44,000,000 assessed against their stockholders since 1865, there has been

but a little over \$33,000,000 in total lost to the depositors.

Below an extract is made from the Comptroller's report, showing the losses year by year back through the hard times of the '90s:

Year.	Number of National banks.	Amount of loss to creditors.	Ratio to deposits.
1888.....	3,140	\$751,716	.056
1889.....	3,290	Nothing.	...
1890.....	3,540	297,002	.019
1891.....	3,677	4,084,559	.257
1892.....	3,773	1,946,879	.110
1893.....	3,781	4,475,528	.308
1894.....	3,755	1,789,371	.104
1895.....	3,712	1,954,048	.115
1896.....	3,676	3,502,158	.219
1897.....	3,610	1,244,145	.037
1898.....	3,585	42,796	.002
1899.....	3,595	361,181	.015
1900.....	3,871	Nothing.	...
1901.....	4,221	117,569	.004
1902.....	4,601	1,113	.00003
1903.....	5,042	34,458	.001
1904.....	5,412	210,084	.006
1905.....	5,757	4,767	.0001
1906.....	6,137	Nothing.	...
1907.....	6,544	Nothing.	...

For the entire forty-three years covered there was but one-twentieth of 1 per cent. lost on an actual average to the people whose deposits averaged each year more than one and one-half billion dollars, and by 1907 exceeded *four and one-third billion* (a year of no losses). The figures show almost nothing in the decade ending 1907,—only \$1 out of every \$60,000.

When one considers the many obvious faults of the system itself, and the pioneer risks which have had to be taken by many hundreds of the banks, the record is even a greater tribute to the quick-wittedness and squareness of American bankers. And conditions are bound to improve with the perfecting of the "credit bureau" now being established at Washington for the detection of improper mercantile borrowing before it is too late.

LIFE INSURANCE COMPANY INVESTMENTS.

TO get at the experience of others is difficult in the field of investment. The individual does not want to tell his private affairs. And most big investing institutions, such as banks and trust companies, have different financial needs from the man or woman with a few thousand dollars "which must bring 6 per cent. and yet be safe."

A fairly close analogy, however, is furnished by the life insurance companies. Like the private investor, their first consideration in the investment of their "reserves" is good income with safety. There is no complication of the money being subject to demand, as in the case of banks.

How life insurance companies invest is

closely indicated by statistics furnished the Life Insurance Presidents' Association by Robert Lynn Cox, its general counsel and manager. The figures were especially prepared by fourteen large companies, representing seven States and owning a large majority of the entire body of American life insurance companies' assets,—\$1,420,000,000 out of \$2,650,000,000. This sum, with other funds received mainly from the companies' foreign business, has been employed as follows:

Real estate.....	\$93,948,411
Real estate mortgage loans.....	502,185,154
Collateral loans.....	34,644,154
Policy loans.....	185,872,929
Railroad bonds and stocks.....	845,115,674
State, county, and municipal bonds.....	49,489,615
Other bonds and stocks.....	131,111,828
Cash.....	46,161,162
Miscellaneous.....	559,873
Total.....	\$1,889,088,810

Real estate and railroads are the backbone,—more than three-quarters. State laws, of course, restrict the disposition of life insurance money. But if they did not the list would probably be little changed in these respects. Just about one-third is in real estate and real estate mortgage loans. It is interesting that an investment rule of thumb, widely printed of late years, has given one-third as a proper proportion to be put into real estate of money which must furnish a living income.

An unexpectedly small percentage is taken by State, county, and municipal bonds. A life insurance treasurer explained this as due to the very favorable opportunities, increasing during the last ten years, for sound investment in mortgages. These two forms of making money work are comparable in that each may be made to yield more than 5 per cent., but may be difficult to turn back into cash for a fair price before the money comes due. The growth of the Northwest especially has made millions of new mortgage loans attractive to life insurance companies, as is plain when the total investment is considered geographically:

State group.	Investments.
Northwestern.....	\$144,847,826
Middle Atlantic.....	898,775,257
Southwestern.....	175,778,501
Pacific.....	81,314,499
Central Northern.....	304,850,890
South Atlantic.....	101,769,061
Gulf and Mississippi Valley.....	101,417,762
New England.....	80,335,014
Total.....	\$1,889,088,810

This table, by the way, contains some evidence that the money involved has been invested scientifically and not so much by the dictates of Wall Street, as has been al-

leged before fifteen State legislatures within the last two or three years. New laws have been sought to compel the investment of life insurance reserves within the State from which they have been drawn. Only one law has been enacted. But there has been much agitation, beginning with the insurance investigation of three years ago.

Compare the table above with the one below, which shows where the premium payments that produced the investment originated:

Group.	Annual premiums.	Per cent.
Middle Atlantic.....	\$121,558,316	42.66
Central Northern.....	53,165,368	19.01
New England.....	28,031,499	9.84
Southwestern.....	24,485,842	8.59
Gulf and Mississippi Valley.	18,201,357	6.39
South Atlantic.....	15,012,957	5.27
Pacific.....	12,143,081	4.26
Northwestern.....	11,331,822	3.98

For instance, about twice their share is given the Northwestern States. They receive more than 7.6 per cent. of the investment, but produce less than 4 per cent. of the premiums.

Since New England and the other elder sections have already become in general lenders of money instead of borrowers, the careful treasurers of the life insurance companies have turned of late years, more and more, to the field of "Western farm mortgages."

IRRIGATION BONDS "BETTER KNOWN."

THAT the speculation of yesterday may have become the investment of to-day is often overlooked by bankers of restricted view. As little as a couple of years ago many Easterners whose business it is to keep well informed shook their heads over irrigation bonds. But that was before the completion of engineering and agricultural marvels such as the 3458 miles of canals and ditches that the Reclamation Service has built, as per its report of this year, bringing under irrigation 4686 farms, covering nearly a million acres, and directly responsible for the establishment of more than 20,000 people on land formerly classed as arid.

Eastern opinion has changed. Mr. George W. Perkins, of J. P. Morgan & Co., a director in many railroad and industrial corporations, is quoted as saying of irrigation bonds, during a trip through the Western grain and fruit region:

"The market for bonds of this character is getting better, with certain limitations. Financing such enterprises will become easier with wider knowledge of their importance and safety. We all realize the im-

portance of irrigation to the Northwest and the entire country."

Indirectly the Reclamation Service has been of essential service to all worthy irrigation interests through its advertising of Western farm lands and their possibilities,—with water. Having been deemed worthy of Government attention, dams and ditches began to take on more substance, more fitness for investable funds.

From Director Newell, of the Reclamation Service, comes a word of discrimination important to investors. "Values result ultimately," he says, "not so much on the title to the *land* as on the ownership of the *water* to irrigate the land."

Not every irrigation company can prove the ownership of the flowing water on which success depends. Before investing employ lawyers of long experience in the tangle of Western water-rights; or employ bankers who employ such lawyers.

INVESTING IN ELECTRIC LIGHTS.

CAUTIOUS financial folks five years ago felt they had better not handle the stocks and bonds of companies in the electric lighting way,—at least "not yet." They "did not offer a form of security sufficiently tried and seasoned." (We quote from a recent address by President Vanderlip, of the New York National City Bank, before the National Electric Light Association.) But "when we note that the total investment in electric light plants has now passed well beyond the billion dollar mark and remember that five years ago there were some 4000 companies, with a total investment of, perhaps, seven hundred million dollars, that statement is surprising."

The people to whom electric light bonds were first offered could point to two great dangers. The first was the erratic and rapid march of new inventions. "No one knew," declared Mr. Vanderlip, "what moment some genius might come along with a new invention in dynamo or lamp that would make scrap of the best plant thus far erected."

Then there was a peculiar danger from competition. Any company which could get hold of fairly cheap power and could raise a few thousand dollars to start a small plant might string its wires into the very heart of an established concern's territory in a comparatively short time.

The recent technical improvement, however, has been along the line of perfection

rather than new invention. And in large cities wires overhead are less and less permitted. The conduit system is welcomed by the investor; there is less likelihood of a real rival company, and very little, indeed, of competitive "raiding."

But the investor's greatest safeguard, as Mr. Vanderlip feels, and as this magazine has repeatedly pointed out, is the movement to-day toward "reasonable regulation" of public service companies. The Public Service Commissions of New York and Wisconsin have set several legislatures to thinking. It seems possible that New Jersey and Connecticut will follow suit during the next legislative year.

The kind of electric lighting bonds best taken by the investor, Mr. Vanderlip remarks, are those of large issues in plants of large cities. The conditions should be settled and the growth steady. At least twice the interest charges should be earned by the company after plenty has been spent on the plant itself.

We have seen the electric lighting business grow more rapidly than almost any other form of industrial activity. A business that will double in five years as the electric lighting business has done has in it a vitality that is, of course, bound to carry it to enormous proportions.

THE TURN OF THE MONEY TIDE.

NOW is the time that the future money rate becomes a topic of more than special interest. A milestone in money movement was set in the second week of last month. The New York banks "lost" about a million dollars in currency shipped West and (mostly) South. A month before the metropolitan banks had "gained" the sum of \$5,000,000.

In the meantime the signing of the tariff bill had set manufacturers (of cotton goods and so forth) to building and extending and consequently borrowing. And extra farmhands, hired for the harvesting, were calling for their \$1, \$2, and \$5 bills.

It doesn't take long for such calls from the "interior" to put the rate up. The middle of last month President Forgan, of the Chicago First National Bank, looked forward "in the near future" to the normal fall shipments of currency and the normal raise in rates.

With a crop guessed to run into eight billion dollars, will there be any difficulty in getting money enough? any "tightness" and consequent disaster? There is special reason for answering no. The farming sections hold unprecedented funds of their own. Kansas banks have reported the heaviest deposits in history,—\$163,000,000. The banks of the important wheat country bordering on Seattle will furnish all the money to move the 1909 crops themselves, declares the *Post-Intelligencer*; "and will also be in position to make loans to buyers."

New York and Chicago bankers remind the South and West how often they have felt "independent" before the autumn money need, only to find themselves running short after all. Yet whole States have been changing character financially. Life insurance companies know how much scarcer are farm mortgages for their money. In the '80s, as much as 8 per cent. was freely offered by the farmer in Minnesota or the Dakotas or Iowa; it is now more and more difficult to make good loans at 5 to 6 per cent.

To-day the "interior" not only owns money,—it can get it when it wants it. The wholesome scare of 1907 led the banks throughout the country to keep more money in the nearest of the 29 reserve cities and not be tempted by a slighter higher rate to put too much in the central reserve cities,—Chicago, New York, St. Louis.

IN DEBT TO EUROPE.

UNLESS the United States increases its exports pretty swiftly its foreign indebtedness may be troublesome. The chorus swells in praise of "prosperity," as indicated by growing post-office receipts, bank clearings, and so on at home. But it is prudent to scan the debts to Europe,—especially for those affected by the course of security markets, such as the investors who want to dispose most profitably of their stocks bought cheap last year.

The first month since 1897 in which imports exceeded exports was July, 1909. Figures at the Port of New York show a "balance" to Europe's credit of \$2,837,862. And meanwhile more than \$13,000,000 of gold was shipped away. The fall foodstuffs will turn the balance; but the figures need watching.

THE NEW BOOKS.

AMERICAN HISTORY.

During the last two years of the Civil War a battalion of Confederate cavalry, known as Mosby's Rangers, enjoyed a fame and prestige out of all proportion to the size of the command. This band of scouts harried the Federal forces throughout northern Virginia, surprised villages and camps within the Union lines by daring raids, made off with large numbers of Uncle Sam's cavalry horses and large stores of supplies, and captured many Union soldiers and officers. To read the contemporary accounts in the Northern press one would form the opinion that the battalion was nothing more nor less than a band of cut-throats; yet the subsequent careers of many individual members of this unique command either give the lie to such an insinuation or prove beyond question that there was some mighty regenerating force at work in the ranks, for a large majority of "Mosby's men" have turned out to be thoroughly respectable and useful citizens, and would fight to-day as valiantly for the Stars and Stripes as any band of men who wore the blue in the '60s. One of these veterans, Mr. James J. Williamson, who served with Mosby from April, 1863, until the surrender at Appomattox, kept a diary of his daily experiences in those stirring times. This journal, supplemented with and verified by official reports, both Federal and Confederate, and illustrated with portraits and maps, forms a unique volume entitled "Mosby's Rangers,"¹ the second edition of which, greatly revised and enlarged, has just made its appearance. It is not to be expected that Mr. Williamson's recollections of incidents will precisely tally with that of Federal soldiers; yet his essential fairness as a chronicler is shown by the fact that he cites the statements of Federal officers as well as Confederate, and in disputed cases leaves his readers to draw their own inferences.

One of the most important of recent Government publications from the point of view of American history is a document entitled "A

¹ Mosby's Rangers. By James J. Williamson. New York: Sturgis & Walton Company. 554 pp., ill. \$2.50.

Century of Population Growth,"² compiled by Mr. W. S. Rossiter, until recently Chief Clerk of the Census. This publication, which is really a monograph, discusses the historical aspects of the first census and analyzes the statistics gathered from the returns of that census in detail. This work, it should be noted, has been performed by Mr. Rossiter now for the first time, no attempt having been made heretofore to cover this ground. Mr. Rossiter's account of the methods employed in taking the first census

(1790) and his survey of the condition of the country at that period would make interesting and valuable chapters in a history of the United States. Indeed, much of the material that he has digested for the purposes of this publication is of the greatest historical significance. It seems to us that this bulletin ought to come into general use in connection with the historical studies conducted in our colleges and universities.

In telling how the Virginia counties got their names,³ Dr. Charles M. Long shows in an interesting way how these names reflect to a certain extent the thoughts and feelings of historic Virginians. The author declares that the nam-

ing of the Virginia counties furnishes more material for colonial history than the county naming of any other State. The references that he has compiled certainly go far to substantiate this claim. Many Virginians, we imagine, will be surprised by the historical ramifications of long-familiar geographical names.

THE DARWIN COMMEMORATION.

Apropos of the Darwin centenary there has been published a volume containing the addresses in honor of Darwin made before the American Association for the Advancement of Science at its Baltimore meeting in January of the current year. The leading aspects of the theory of evolution were assigned by a committee to specialists who by reason of their own

² A Century of Population Growth in the United States, 1790-1900. By W. S. Rossiter. Washington: Government Printing Office. 303 pp.

³ Virginia County Names. By Charles M. Long. Neale Publishing Company. 208 pp. \$1.50.



JAMES J. WILLIAMSON, OF "MOSBY'S MEN."

high attainments were considered peculiarly fitted to treat them. The topics treated were as follows: "Fifty Years of Darwinism,"¹ by Edward B. Poulton, Oxford University; "The Theory of Natural Selection from the Standpoint of Botany," by John M. Coulter, University of Chicago; "Isolation as a Factor in Organic Evolution," by David Starr Jordan, Stanford University; "The Cell in Relation to Heredity and Evolution," by Edmund B. Wilson, Columbia University; "The Direct Influence of Environment," by D. T. MacDougal, Carnegie Institution of Washington; "The Behavior of Unit Characters in Heredity," by W. E. Castle, Harvard University; "Mutation," by Charles B. Davenport, Carnegie Institution of Washington; "Adaptation," by Carl H. Eigenmann, Indiana University; "Darwin and Paleontology," by Henry F. Osborn, Columbia University and American Museum of Natural History; and "Evolution and Psychology," by G. Stanley Hall, Clark University. A brief introduction to the volume is supplied by Prof. T. C. Chamberlin, of the University of Chicago.

A volume of commemorative essays on "Darwin and Modern Science"² has been edited for the Cambridge Philosophical Society and the Syndics of the University Press by Prof. A. C. Seward. These essays were prepared by eminent professors in British and Continental universities and deal with almost every phase of Darwin's contributions to science.

BOOKS ON RAIL AND WATER TRANSPORTATION.

The history of railroad promotion and capitalization in the United States³ is attractively presented in a volume by Dr. Frederick A. Cleveland and Fred Wilbur Powell. An important adjunct of their treatment of the subject is an exhaustive bibliography, the cost of preparing which has been largely borne by the Carnegie Institution. The writers promise to present at a later date subjects pertaining to the financing of construction and equipment, financial management, bankruptcy, receivership, reorganization, and consolidation,—the whole making a condensed survey of American railroad finance.

In prosecuting the researches which resulted in his volume on "Railroad Freight Rates in Relation to the Industry and Commerce of the United States,"⁴ Dr. Logan G. McPherson, lecturer on transportation at the Johns Hopkins University, sought and obtained information directly from the traffic vice-presidents and freight traffic managers of the railroads, the traffic experts of great industrial and commercial corporations, and the shippers' organizations of the various cities, and from individual shippers. In this survey the entire country was covered. To the general public the present freight-rate system is a mystery. Dr. McPherson has made a fairly successful attempt to elucidate the funda-

mental principles from which the system has been evolved.

The first part of the report of the Commissioner of Corporations on transportation by water in the United States⁵ has just been issued from the Government Printing Office. This part deals with the physical character of coastwise and inland waterways, with the types of vessels, and with financial and legal conditions. For the most part these topics have heretofore received only superficial treatment and, considering the importance of the interests involved, it seems strange that authoritative data are so scanty. The information now for the first time published by the Bureau of Corporations is of the greatest value to shippers and all others interested in water transportation throughout the country.

In view of the journey down the Mississippi soon to be made by President Taft the little volume by John L. Mathews, entitled "Remaking the Mississippi,"⁶ has a timely interest. This book presents in a concise, interesting way a correct account of the several engineering methods by which each great division of the Mississippi has been so far developed, with a correct summary of the cost to date. The book is illustrated with striking photographs showing river conditions and what has been done to improve them.

A NEW BOOK ABOUT INTENSIVE FARMING.

"The Garden Yard"⁷ is another helpful contribution by Bolton Hall to the current popular discussion of intensive farming. No one need be deterred from perusing Mr. Hall's books by any dread of technical writing. His books are addressed to the "plain man and woman," and are intended to show how a living may be made on small resources in the way of land or equipment. "The Garden Yard" is a handbook of practical suggestions.

THE CATHOLIC ENCYCLOPEDIA.

The fifth volume of the "Catholic Encyclopedia"⁸ carries the work into the letter "F" of the alphabetical arrangement. While only one-third of the complete work has as yet reached the stage of publication, the general reader is able to form a fairly intelligent opinion of the range of topics covered by this very learned work, which traces the rise and growth of the Catholic Church, explains its doctrines and dogmas, gives the meaning of its ceremonies and usages, expounds its philosophy, relates its biography, and in general shows the influence of the Church on the progress of the world, past and present. Among the specific topics discussed in this volume are "Egypt," "Evolution," "Education of the Blind," "Eastern Churches," "Divorce," "Fasting," "Divination," "Excommunication," and "Conservation of Energy."

¹ Fifty Years of Darwinism. Henry Holt & Co. 274 pp., ill. \$2.

² Darwin and Modern Science. Edited by A. C. Seward. Putnam's. 595 pp., ill. \$5.

³ Railroad Promotion and Capitalization in the United States. By Frederick A. Cleveland and Fred Wilbur Powell. Longmans, Green & Co. 368 pp. \$2.

⁴ Railroad Freight Rates. By Logan G. McPherson. Henry Holt & Co. 441 pp. \$2.25.

⁵ Transportation by Water in the United States. Part I. Washington: Government Printing Office. 614 pp.

⁶ Remaking the Mississippi. By John L. Mathews. Houghton Mifflin Co. 265 pp., ill. \$1.75.

⁷ The Garden Yard. By Bolton Hall. Philadelphia: David McKay. 321 pp., ill. \$1.

⁸ The Catholic Encyclopedia. Vol. V. New York: Robert Appleton Company. 795 pp., ill. \$6.